AMERICAN AGRICULTURIST,

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON

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Contents for July, 1865.

Agricultural Bureau—A Word to President Johnson..232
Bees—Apiary in July.....204
Boys and Girls' Department—Making Garden Work Easy—Interesting Traditions of the Earliest Times—A Child's Question—Problems and Puzzles—"The Boys are coming Home again"—Friends among the Birds—A Calculating Hen... 3 *Ill* .223-224
Celery—How to Raise.....3 *Illustrations*..218
Cheese—Coloring without Annatto.....221
Citron—How Prepared.....2 *Illustrations*..221
Clay Lands—Crushing Clods.....214
Clover Hay—How to Cure.....214
Cold Grapery in July.....204
Cooking without a Fire.....222
Currants—How to Preserve.....222
Drinks for Summer.....221
Exhibition Tables at *Agriculturist* Office.....206
Farm Work in July.....201
Flower Garden and Lawn in July.....203
Flower—Touch-me-not or Jewel Weed.....*Illust*..217
Fox—The Red (*Vulpes fulvus*).....*Illustrated*..209
Fruit Garden in July.....203
Garden—Kitchen in July.....203
Gardening—Useful Implements for.....*Illustrated*..219
Grape Mildew and its Cure.....2 *Illustrations*..217
Green and Hot-Houses in July.....203
Hay Cured without Drying.....211
Hay—Drawing with a Rope.....*Illustrated*..212
Hay Fork Attachment—Halsted's....2 *Illustrations*..212
Hay Rigging for Wagon.....*Illustrated*..212
Hearth Rug—Home-made.....222
Hoed Crops—How to Cultivate.....210
Hoove in Cattle and Sheep—Prevention.....211
Horse Power Defined.....210
Horses—Use of Check Rein.....211
Manure—Liquid, and Pump for Raising.....2 *Ill*..213
Map of Fortifications around Petersburg.....208
Map of Vicinity of Petersburg and Richmond.....207
Market Report and Commercial Notes.....226
Mowing Machine Knives—How to Sharpen.....211
Notes and Suggestions for July.....201
Orchard and Nursery in July.....202
Orchard Grass—Further Notes on.....214
Pear Tree Blight—Causes and Cure.....220
Pear Trees—Double Working.....218
Plow Beams—Proper Length for.....210
Poultry Book—New.....215
Poultry—Hints on Showing; Exhibition at Museum..206
Poultry—Various New Breeds...2 *Illustrations*..215-216
Recipes—Bread—Steamed Corn Bread—Butter Crackers—Lime Water for Sour Dough—Floating Island—Poor Man's Jumbles—Tea Crackers—Omelet—Beet Hash.....223
Rake for Gathering Scatterings.....*Illustrated*..213
Rake Teeth—Best Form for.....*Illustrated*..210
Rhododendrons at Parson's & Co.'s.....220
Rose—Sport of.....*Illustrated*..220
Rural Embellishments.....*Illustrated*..217
Shackles - Improved for Bulls and Bucks.*Illustrated*..213
Soap and Soap Making.....222
Sparrows - European in America.....*Illustrated*..209
Strawberry—Agriculturist Plants for Premiums.....232
Strawberry Exhibition at *Agriculturist* Office.....232
Strawberry Time in New York.....222
Strawberries—Notes on.....219
Summer Fallows—Suggestions About.....211
Turnips—Raising on Heavy Soils, etc.....209
Vinegar Making.....*Illustrated*..221
Virginia Battle Fields.....2 *Illustrations*..207-208
Washington Monument—Is it a Humbug?.....232
Western Agriculture—Letter from Western Boy.....215
Weed—The Common Groundsel.....*Illustrated*..220

INDEX TO "BASKET," OR SHORTER ARTICLES.

Articles, Publishing.....204
Asparagus Beds.....205
Azalea, Fine.....205
Beef for Government...206
Beef, Price of.....206
Bones, Breaking.....204
Bones, Use of.....204
Broccoli.....206
Broom Corn, Dwarf.....205
Buttonwoods.....205
Canada Thistles.....205
Carrots, Wild.....206
Cider Mills.....206
Clothes-Wringers.....205
Corn Fodder.....204
Diarrhœa Remedy.....206
Everlasting Flower.....205
Fairbanks' Scales.....205
Farms, Southern.....204
Flower Beds, Form.....205
Fruit, Bottling.....206
Fruit, Preserving.....206
Fruit Stains.....206
Fuchsia, Defective.....205
Grape Vines in Pots....205
Grapes and Wine.....205
Hungarian Grass.....205
Lightning Rods.....205
Locust Suckers.....205
Lottery Humbug.....206
Manure, Liquid.....204
Melons, Training.....205
Microscope Humbug....206
Missouri Lands.....204
Muck and Lime.....206
Mushroom Culture.....206
Nurserymen, Reliable...204
Papaw Bark.....205
Persimmon Seed.....205
Photographs of Lincoln,206
Plants Named.....206
Plants for Shade.....205
Plaster, etc., for Land...204
Poudrette Museum.....205
Sandy Land, Improving.204
Soap and Caterpillars...205
Squashes, Mixing.....205
Tree Protectors.....205
Turnip Seed per Acre...205
Vine Culturist.....205

Notes and Suggestions for the Month.

July, if the weather be only what we hope for, will give the farmer but little time for reading. His labors begin early and close late, to be renewed with the next dawn. Men are very likely to overwork, and over-ambitious boys, by too hard mowing or pitching, or by doing "the work of a man" in some other way, injure themselves for life. Many a farmer is undersized, crooked, or one-sided, because he was ambitious, when a boy, of being told that he was worth as much as a man in the harvest field. They only realize when too late, that they will never be worth so much again.

Drouths may come, and constant working of the surface, mellowing the soil, deeply as possible, without injury to the roots of the growing crop, is the cure which almost all may apply. A fine mellow surface absorbs water from the air. We can not too often urge irrigation. The brooks and streams which can be conducted over meadows and lower-ground, are of almost inestimable value, and yet it is hard work to make farmers believe it. Every man may have a demonstration of the advantages to him in a fortnight's time, if he will only conduct a small stream over his grass land. The time is not far distant when many farms will have irrigated meadows, yielding three, four, or five crops of luxuriant grass during a single season.

Barns.—Clean out thoroughly during rainy weather. Begin at the top and sweep down all spider webs, chaff and mouse litter from the beams and girders. Turn over loose boards on the ground floors, and brush out wire-worms, sowbugs, centipedes, and all other insects that exist there and in cracks. Where there are large cracks in the upper sides of beams, fill them with coal tar, and then scatter clean sand over them, so that it will settle into the tar. This preserves the timber and also repels insects.

Barley.—Cut before it is dead ripe, and cure with care, as the grain will be heavier and brighter, and command a greater price in market; and the straw will furnish a great amount of fodder. When hay caps are not used on the barley shocks, to protect them from rain, the long straight bunches of straw should be placed carefully all over the tops of the shocks to turn the water as much as possible, and save the grain.

Beans.—Field beans may be planted as late as the middle of this month, where early potatoes have been dug, or where Indian corn has failed.

Buckwheat.—Sow as soon as the middle of the month in this latitude. Where there is danger of early frost, put in the seed sooner. Do not sow more than one bushel per acre. Twenty-four quarts of good seed is sufficient. Buckwheat may be sowed after barley, in many localities, and ripen before frost. Sow the seed very evenly, and roll the ground where there are any small stones or clods, in order to have a smooth surface on which to harvest the grain.

Butter.—See that milk pails and pans are thoroughly scalded; that those who milk have clean hands; that the milk is kept in a cool and airy place; that the cream is skimmed off at the right time; that churning is done often; that clean salt is used, and that the butter well worked and neatly packed in inodorous vessels.

Cabbages.—Where the ground is rich, nice heads may be raised before winter from plants set any time in July, if they are kept well hoed.

Corn.—Keep the horse-hoes and cultivators in motion among the growing corn. Use a short whiffle-tree when the stalks are so large as to break off easily. Straighten up all hills that are not disposed to grow erect. Hot weather is the best time to work among growing corn. Better pull than to cut large weeds; Indian corn does not need root pruning.

Calves.—See that they have a good supply of clean fresh water, during the hot weather. Let them have access also to a tub containing salt. Wean them gradually. It is very injurious to withhold a full supply of milk, abruptly, and confine them to grass and water. It often stunts them so that they never recover from it.

Clover.—Read the articles on clover seed, and making clover hay, in this and previous numbers. Where clover has got the start of stock in pastures, it is better to mow it off and let a new crop grow, than to let it go to seed, as animals do not relish it when it is old and tough.

Draining.—Look out for, and give early orders for good tiles. Round or pipe tiles are best, if well made and burned. Never use soft ones. A well burnt tile ought to ring like a bell when struck, and a soft one will not unfrequently be crushed by the weight of earth settling over it.

Fallows.—Read the remarks on summer fallows on page 211 of this number. Rather than allow a good soil to lie exposed to the burning sun for several months, sow three or four bushels of Indian corn per acre. In six weeks there will be a good burden of green manure to plow under. Let fathers repeat it to their sons, and let them impress it upon their posterity, that fallowing good land tends to impoverish it.

Grain.—Make timely calculations to commence harvesting grain before it is dead ripe.

When it is to be threshed soon after it is cut, stack it close to the barn doors, and run the straw into the barn. By this means a large amount of fodder can be saved in good order.

Grass and Hay.—Read the suggestions about making hay on another page. Where grass grows very large in moist places, and falls down, let it be cut and made into hay at once. When a farmer has a large quantity of grass to mow, if he waits until it is all fit to make into hay, unless he has an abundance of help, some of it will become too ripe. This will suggest the importance of sowing different kinds of seed, in some meadows, so that part will be fit to cut a few days in advance of the rest.

Hay Mows.—Store the hay as evenly as possible, so that it will come out easily. Let a boy, or weak man manage the hay fork, and let a strong man mow away the hay, as that is much the hardest work.

Hoeing.—The object of hoeing corn and root crops is not simply to keep down the weeds, and to draw a little fresh earth about the roots, but it is primarily to stir and loosen the surface, that the air and rains may have free access to the soil in which the roots are. The frequent passage of a light cultivator or horse-hoe is of great benefit to crops on land suffering from drouth.

Hedge and Fence Rows.—Ply the bush-hook, and keep down the brush; let no weeds go to seed.

Manure.—If care be taken, an immense quantity of weed growth may be converted into good manure, either by throwing it in the hog pens, or by making a regular compost of it, putting it in alternate layers with any fermenting manure; or piling it up and pumping liquid manure over it. Cows brought to the yard nights, and fed an armful of grass each, cut in the morning, and thus well wilted, will drop manure enough to pay for the labor over and over again, if it be only well collected and composted.

Oats.—Send careful men through the fields, and pull up dock, mustard, or other weeds. Where oats fall down before the panicles are formed, they had better be cut at once, and cured like hay, as they make excellent fodder. Grain does not fructify well, after the straw has fallen down.

Pastures.—Do not feed off pastures too closely, as the grass will be a long time starting again, especially in hot and dry weather. It is bad policy to keep so much stock that pastures are always very short. The leaves of grass perform the office of lungs. Therefore, let plants have top enough, that the breathing may not be obstructed.

Potatoes.—Finish cultivating and hoeing potatoes as soon as practicable, as the roots should not be disturbed after tubers have begun to form. If weeds appear among them, they should be pulled rather than hoed up.

Poultry.—Keep a good dust bath for the fowls, and add unleached wood ashes to it occasionally; watch any appearance of vermin, and clear them out with an application of kerosene, which may be rubbed under the wings, and on the backs and breasts of the birds. Whitewash occasionally and thoroughly houses, perches, nests, and all.

Sheep.—The best attention for sheep this month is to allow them an abundance of good grass and salt. Dry ewes and yearlings are very liable to be in heat this month. See that bucks do not run in the same flock with them, unless they are shackled as directed on page 213. If there are any old ewes in the flock, separate them at once, where they may be fed one pound of corn meal daily. If confined in a small enclosure, they may be fed mowed grass and meal. Managed in this way, they will make good mutton in two months. Old ewes will fatten much sooner in hot, than in cold weather.

Stacks.—Where hay or grain is put in stacks, make a foundation at least half a foot from the ground. The best way to build a stack is, long and narrow, and to cover it with good boards, placed directly on the top, forming a roof like the covering of a lean-to, sloping only in one direction.

Swine.—As soon as green peas are fit to feed, let the swine have a good supply. Keep shoats in a thriving condition. When they are confined in close quarters, mow an armful of red clover for them, once or twice a day. Where whey is fed, it will make much better swill to mingle meal, or shorts with it, and allow fermentation to commence before feeding. Swine of all kinds like clean and pure water, as well as any other animals; and if they could always have access to it, they would not probably "wallow in the mire."

Soiling.—Millet, Hungarian grass, oats, sorghum, and corn may be sowed for soiling.

Turnips.—There is no kind which gives better satisfaction on the whole than the purple top strap-leaf. It is the turnip for the million, both for the table, for market, and for feed. Swedish turnips (Rutabagas), sowed during this month, make excellent table vegetables, better than if sowed earlier, because tenderer. Sow in drills, and give some cultivation. Sow broadcast only among other crops in open corners, or by-places, and where you cannot use the seed-drill well.

Tanbark.—When teams have little to do, and laborers are at leisure, haul spent tanbark and deposit it in some dry place, for littering stables next winter. Dry tanbark is an excellent absorbent of liquid manure, and it will pay to haul it, as well as saw dust, one or two miles. In summer it can usually be obtained readily. In autumn it is sometimes scarce.

Tools.—Keep all implements under cover, or in the shade during hot weather. The sun warps and cracks the wood work of scythe snaths, rakes, and forks, and when they are covered with dew, a thin scale of rust is soon formed on bright surfaces of iron and steel, all of which injure them more than ordinary use; alternate rain and sunshine will often straighten bent pieces of wood.

Tedders.—When a farmer has much hay to make, it will pay to procure a tedder, and keep it in constant operation, until the hay is fit to rake. Grass will cure much faster when it is flying through the air, than when it remains on the ground.

Ventilators.—Make one or two near the middle of every stack, and mow, by tacking four boards about one foot wide together, making a trunk; set these on the end, and draw them upwards, as the mow, or stack is carried up. Some holes should be bored through the floor where the ventilator stands, to let in the air. A bag stuffed with hay answers a similar purpose to the trunk of boards, but, of course, may not be left in the top of the hole, as the trunk may, when the mow is full.

Wheat.—In localities where winter wheat will be fit to harvest the last of the month, see that every thing is in readiness before the grain is fully ripe. Wheat makes more and better flour, if it is cut before the heads droop; before the kernels have passed the "dough state." Leave an acre, or more of the earliest and best to ripen fully for seed. Wheat makes better flour to put it in shock, as soon as cut, rather than to sun it in the swath, as is sometimes practised. In lowery weather, cover the shocks with hay-caps.

Weeds.—Write the words, *Mow Weeds*, in large letters, where all hands will be sure to see them; and let every laborer understand, that if it is too wet to work at hay, grain, or hoed crops, weeds may be mowed, close to the ground. In many pastures, large bull thistles cover nearly one half the ground. They should be mowed not only to allow the grass to grow, but to prevent the seed blowing over the country.

Wood.—For use next winter, fire-wood should have the benefit of the hot weather in July and August, if not already cut and piled under shelter.

Work.—Drive your work in the cool parts of the day. From four o'clock to seven in the morning—the very time when most farmers do the least work—is the pleasantest time to labor. Rest from 11 to 1 o'clock. Then work will go much easier, than to rest during the cool part of the day.

Yards.—Grade and drain barn and stable yards for winter. Level up low places by hauling in hard and heavy earth in time to allow it to settle before heavy rains in autumn. Where the surface is uneven, plow down the knolls and ridges, and make the surface quite level and smooth in the summer.

Work in the Orchard and Nursery.

Although the orchards in the vicinity of New-York City flowered profusely, they, at the present time, show but a very moderate promise of fruit, and as far as we have observed, only a medium crop is likely to be realized. Great complaint is made of ravages of the tent caterpillar, which has in some sections quite stripped the foliage from the trees. If this were an evil beyond our powers of control we should feel more sympathy for the sufferers than we do, but of all the insect pests, this is the most easily managed. The eggs are placed in large bunches, and conspicuously upon the twigs, as if for the very purpose of being readily destroyed, and as soon as the caterpillar begins work he puts up his sign in the shape of a tent, which can be seen long before much damage is done, and hundreds captured at a swoop. It is some work to clear a large tree of the nests, but it is a labor which will pay, and two or three times going over the orchard will save many bushels of fruit. It is likely that those who have suffered from the caterpillar this year, will heed our frequent and timely warnings concerning their destruction. Trees which were set out this spring should be making a good growth, but if, as is often the case, the buds show a few leaves and push no shoots, it is an indication that they need a severe cutting back.

Budding.—The time for performing this operation will vary with the season, location and kind. Whenever well formed buds can be had, and the bark "runs," or parts freely from the wood of the stock, the buds may be put in. Work as close to the ground as possible, and exercise the greatest care in procuring buds true to name, and in keeping the varieties so marked that there will be no mistakes. Plums are usually the first to be worked. Stocks budded last year may now be cut off smoothly, close to the shoot from the bud.

Cherries.—Exercise care in picking, and allow no limbs to be broken or the bark to be injured.

Grafts.—Remove all suckers that stand near the graft, and keep the cut surface of the stock covered with wax or clay.

Insects.—Kill moths as directed last month. Late crops of the tent caterpillar will be found here and there, and must be removed. The slug appears on the pear tree this month, and may be treated to a dusting of lime shaken from a bag tied to a pole.

Layering.—Shoots of this year's growth may be layered as soon as the wood is somewhat hardened. The process is described on page 187, last month.

Manure and Mulch.—Newly planted trees especially, will need mulching, and bearing trees will be benefitted by it, especially if coarse manure is used. The crop in established orchards will be much finer if the grass is removed from over their roots and a coating of long manure spread there.

Thinning.—Should be attended to, especially on young trees. The overbearing of a tree when young, seriously checks its future growth. Where fine specimens are desired, thin very freely.

Pruning.—Where large limbs must be removed, it is best done this month. In cutting off a limb, do it with a clear notion of the object to be gained. If the head of a tree is too crowded, if it has been allowed to grow one-sided from neglect, if some limbs are too near the ground, or if there is chafing by the crossing of two branches, it may be beneficial to cut. Use a rather wide set saw and be careful not to strip the bark. Cover the wound with melted grafting wax. Remove all suckers and useless "water shoots."

Seeds and Seedlings.—Collect seeds as fast as they ripen. Shade seedlings as directed last month. Keep the ground free of weeds.

Transplanting.—By using proper care to prevent the roots from drying, evergreens may be removed to a moderate distance, but they must not be kept out of the ground many hours. We recently saw some locusts transplanted last year late in June,

which were in fine condition. The trees were cut back very severely, almost to straight poles.

Weeds.—The plow, hoe and cultivator must be kept constantly bright by use, if one would keep the better of weeds. These are quite as injurious to young trees as to other plants.

Kitchen Garden.—Those who have small gardens do not generally make the most of them, for the reason that they do not practise a system of rotation. The ground occupied by early potatoes may be used the same season for cabbages, beans, lettuce, peas, or celery; peas may be followed by any of the above except beans, or late spinach, or turnips may be sown. The list of things which may be sown late, given last month on page 187, will be useful as a reminder, and in sowing in rotation do not let closely-related plants follow one another; thus cabbages should not follow turnips, nor beans be sown directly after a crop of peas has been taken from the same ground.

Asparagus.—Keep the weeds from the beds and give a dressing of manure. Cut off all the tops which have the larvæ of the beetle, and burn them.

Beans.—Plant for late crop and forward the Limas by liquid manure and good culture. Help them if they are not disposed to wind of themselves. In saving seed, select the most prolific plants and allow none to be picked from them.

Beets may still be sown for a late crop. Thin those up as soon as large enough. The young plants are excellent greens.

Cabbages and Cauliflowers.—The early sorts will soon be out of the way, and the land may be prepared for celery or other succession crop. Transplant the late crop, observing the hints given last month on page 186. Give liquid manure when they are well established, and hoe often, especially in dry weather. The caterpillar is often very destructive. When the brood are first hatched they remain near together, and may be removed by breaking off a single leaf, but when larger they scatter in search of food and must be killed in detail.

Celery.—The admirable article of Mr. Henderson, on page 218, gives sufficient directions for growing.

Carrots.—Sow some for late, if young carrots be desired. Thin others and keep the ground hoed until the tops meet.

Corn.—Plant for late use and for drying.

Cucumbers.—Hoe as long as the vines will allow; water if they suffer from drouth. Those for pickles may still be sown. Select the finest for seed.

Egg Plants.—Hoe and earth up, and feed them with liquid manure, and mulch them.

Endive.—Sow for late crop the same as lettuce.

Herbs.—Cut as they are ready to flower, dry in the shade and put up in paper bags or tight boxes.

Hoe and Rake.—The free use of these is wonderfully persuading to all vegetables. Use them after a rain to break the crust that forms, and use them before a rain, and at all times when the soil is not too wet. A thorough stirring of the soil in a dry time is better than watering.

Lettuce.—Save seeds from the finest heads. Sow the Silesian in partial shade.

Manure.—Give the roots plenty of food in the liquid form. House slops are good. Liquid manure from hen droppings—a peck to a barrel of water—is better. Cow manure tea is good also.

Melons.—Treat the same as cucumbers. Remove all the fruit that will not ripen before frost.

Onions.—Thin if they are crowded. Pull those that are ripening, and dry thoroughly before storing.

Peas.—Save seed. Plant some of the early varieties for late. Clear off the ground occupied by the early ones and prepare it for some other crop.

Rhubarb.—Keep the flower stalks down and give the plants rest and manure.

Seeds.—There is no difficulty in saving good seed if one will only take sufficient care. It is often the case that all the first fruit of a plant is taken for use and seed saved from that which is produced later, and it is no wonder that sorts treated in this way "run out." To get seed that will continue to produce not only the same, but improved results, set apart a sufficient number of plants of cucumbers, tomatoes, peas, beans, corn, etc., for seed only, and allow nothing to be taken from them for use. When the fruit is set, take off all but a moderate crop of select specimens, and allow those to ripen for seed. When one plant of a variety is seen to be a few days earlier than the rest, mark it for seed. By a careful selection of seed, the quality of our garden products can be greatly improved.

Sweet Potatoes.—Keep the ground clean and move the vines to prevent them from striking root.

Squashes.—The squash bugs should be looked for and caught before they lay their eggs, and any eggs that are found on the under side of the leaves crushed. The only remedy yet known for the squash borer is to dig him out. If the vine wilts, look for the hole made by the borer. If this is near the root he may sometimes be dug out and the vine saved, but usually the discovery is made too late. Hoe the vines and allow them to strike root.

Tomatoes.—Last month we gave an account of a method of training. Other modes may be adopted or the vines be allowed to fall over upon brush placed for the purpose. Pinch in the branches so that one leaf will remain above the bunch of blossoms. If the vines are eaten, search for and kill the large green worm that does the mischief.

Turnips.—Sow the Swedes or Rutabagas, and White French, and other late kinds.

Weeds.—A good crop of these may be raised with but little trouble, but if other things are preferred, use some of the weeding implements described and figured in this and previous numbers.

Fruit Garden.—Every one growing fruit should aim to have the best of its kind, and now that the different ones are ripening in succession, he should compare his own varieties with those grown by others, to see what room there is for improvement. The local horticultural exhibitions and farmers' clubs, are very instructive to this end; and where these are not held, one should visit his neighbors to compare notes.

Blackberries.—Keep the ground free of weeds by hoeing, or a heavy mulch, which is better, as it is difficult to work among the bushes. Tie up the branches that bend over with their load of fruit.

Currants.—If the worm makes its appearance, give a dusting of white hellebore, as advised last month. The borer, which eats the pith, is often very troublesome. It comes from an egg laid by a small moth near a bud. Some plan for trapping the moths is greatly needed. Much pruning may be saved by removing needless shoots when they first push. Shading a portion of the bushes will retard the ripening and prolong the season.

Dwarf Fruit Trees.—Thin the fruit freely if at all disposed to overbear. If the trees are to be kept dwarf, summer pinch them as directed in article on pyramids, published in January last. Give manure and mulch. Treat the red spiders to frequent syringings of soap suds, and if the slug appears dust with air-slaked lime.

Grape Vines.—Keep all vines, young or old, tied to the trellis or stakes. Pinch the laterals to one leaf and when a new growth starts from the pinched lateral, pinch that again to one leaf, and keep doing this. Stop the growth of fruiting canes by pinching them at 3 or 4 leaves beyond the uppermost bunch of fruit. Do not allow any vines, young ones, especially, to overbear. See article on mildew on page 217, and use sulphur as there directed. Thrips are very troublesome in some places; it is said that sulphur will keep them away.

Raspberries.—As soon as the fruit is off, cut away the old canes and remove all of the new ones not needed for next years' bearing.

Strawberries.—After the picking is over, fork a good compost in around them. Keep the runners pinched off unless new plants are needed.

Flower Garden and Lawn.—Now that the novelty is over, the amateur should not abate his zeal, and allow the borders to fall into partial neglect. There is abundance of work for those who would keep their grounds in complete order, in suppressing weeds, removing stalks from plants out of flower, training rampant growers, pegging down bedding plants, transplanting annuals for late bloom, etc. The surface of the soil should be kept loose, and when it bakes after a rain, it needs to be raked or hoed over.

Bulbs.—Those which have finished their growth, which may be known by the wilting of the leaves, may be taken up, and put in papers, as directed last month, or in boxes or flower pots of dry sand.

Carnations.—Propagate as directed last month, and keep those in flower neatly tied up.

Dahlias.—Set out a stake, and then set out the root. Train to a single stem, or allow three of the lower branches to push, which will form a large, bushy plant; these side branches will also need stakes. Keep them growing and safely tied up.

Evergreens.—Prune single trees or hedges, if not already done, and remove the grass from immediately over their roots.

Geraniums.—If the plants are long-legged and straggling, cut them back severely, so as to form compact and well shaped specimens; they will soon push out more shoots and flower finely.

Gladiolus.—Tie the flower stalks to stakes.

Grass.—Mow as often as long enough, and in hot weather, if the grass is light, do not rake it off, but leave it as a mulch. Pull up coarse weeds, and keep all the margins closely trimmed.

Potted Plants.—See that all have sufficient shade, and do not suffer from dryness. If the pots are to be plunged, put a little coal ashes at the bottom of the hole, to keep the worms out of the pots.

Propagation.—The stock of shrubs may be increased by layering, and many herbaceous plants, such as phloxes, by cuttings, taken before flowering.

Pruning may be done to ornamental trees, as directed for fruit trees under Orchard and Nursery.

Rhododendrons.—Mulch, and carefully remove the forming pods, unless seeds are desired.

Roses.—Cut back the perpetuals freely, to secure a late bloom. Layer the new growth of those it is wished to propagate. Rose bugs must be caught and killed, and the slug cured by the use of whale-oil soap. Keep the new growth of the climbing sorts well tied up to the trellis.

Seeds.—Collect from the best specimens only, which should have been marked when in flower, just before the pods burst.

Verbenas.—Keep well pegged down. A correspondent of the Gardener's Monthly says: Take a bit of bast matting, or similar material, 3 or 4 inches long, pass it around the stem, until both ends meet, and then with a stick press the two ends into the soil, and it will hold the plant in place.

Watering.—This should only be done when the plants show signs of suffering. Remove the surface earth around the plant, give water copiously, and when it has soaked away, replace the earth.

Green and Hot-Houses.—The tropical plants which remain in the house, after the others are removed, should be secured from burning by the mid-summer sun, by whitewashing the glass, or the use of a muslin screen. The atmosphere must be kept moist by sprinkling, and the earth in the pots properly watered. All rubbish is to be removed, and everything kept neat.

Budding.—Shrubs which are propagated in this way, are worked whenever the bark will lift, and well formed buds are to be had.

Insects.—Continue to destroy by the methods heretofore noticed in the Calendar.

Potting.—Collect sods, and stack up to decompose for potting compost. Pot rooted cuttings and seedlings. If large plants are in a sickly condition, wash the earth from the roots, remove diseased roots, head back the top, and re-pot in fresh earth.

Propagation.—Geraniums and other plants, needed for blooming next winter, may now be started from cuttings. Inarch Azaleas, Camellias, and other hard-wooded plants, whenever the wood gets firm.

Pruning.—Use the knife, or with soft-wooded things, pinching, to bring into good shape.

Cold Grapery.—The vines must not be allowed to suffer from dryness, and if there is any danger of this, water the borders with weak liquid manure. As the growth pushes from the laterals, it must be pinched as before directed. Thin the berries with a pair of scissors, those made for the purpose are safest, removing one half, or more, according to the variety; beginners often make the mistake of leaving the bunches too crowded; a greater weight of finer fruit will result from proper thinning. Mildew shows itself in spots on the leaves, and when it appears, the vine of the house must be kept as dry as possible, and the syringing discontinued. Sprinkle sulphur freely over the floor of the house, and keep dry until the difficulty disappears. If not troubled by mildew, continue to sprinkle every evening. The temperature should be 90° to 95° at midday, which during the night may decrease to about 85°.

The Apiary for July.—*Prepared by M. Quinby, by request.*—All who have had experience in removing boxes from the hives, when there was not a full supply of honey from the flowers, have had some difficulty to get rid of the bees, without losing a considerable portion of the honey. A gentleman in Cherry Valley, N. Y., has given me his method of getting the bees out, which, although I have not tested it, I think must be preferred by some, to any method heretofore given. Firstly, he designates each hive with a number, and when the boxes are put on, each one receives the same number as the hive. When a box is full, an empty one, to replace it, is numbered in the same way. Two slides of zinc, or heavy tin are used to slip between the box and hive, one to keep the bees from coming up out of the hive, the other to keep the bees in the box, and is lifted off with it, and the box inverted. The empty box is put on the full one, and the slide removed, giving the bees free passage to the upper box. Any number of boxes may be set on one board, and by striking the board gently with a stick, or hammer, the bees immediately leave the full for the empty boxes, when the slide is inserted and each box containing the bees returned to the hive to which it belongs, which is known by the number. If a large number of boxes are to be taken off at one time, it will be necessary, without a corresponding number of slides, to use pieces of glass, or wood to lay over the holes in the tops of the hives, while other boxes are being taken off. The advantages of this method are, that no bees can fly to annoy any one; and all young bees that have never before left the hive, and are usually lost, are returned; the bees are already in the box, and go to work sooner; the honey in the box is clean, etc. Boxes should never remain on the hive after they are full. A few cells next the glass will not be sealed in a long time, and to wait for every one to be finished, involves the soiling of the combs. When a hive has more boxes part full, than the bees are likely to finish, a part or all may be removed to some other strong stock to finish. No harm will be done, if changed two or three times. One box finished, is worth two or three half full.

Should a hive refuse to swarm, and a great many bees cluster outside for want of room, a second set of boxes may be put on by making holes through the top of the lower ones. Those part full should be raised, and empty ones put under. It is not good economy with the movable comb hive, to allow colonies to become so crowded with bees, as to remain outside in large numbers, for a long time. When all cannot find employment in the hive and boxes, it is well to remove some of the full combs—every alternate one, when more than one is taken—and supply empty frames to be filled. The full combs containing brood, may be given to weak, or late swarms (after jarring off bees), thus making those vigorous and valuable, that might otherwise be almost worthless. In the swarming season, such colonies may be divided.

See if any stocks are exhausted by swarming, till too few bees are left to protect the combs from worms. If the worms cannot be kept out, break up the hive, save the honey and wax, and thus avoid breeding a swarm of moths, to infest the other hives. When queens are not raised artificially, and kept to supply queenless stocks, it is good economy to hive a small swarm or two, to keep the queens to supply destitute ones. Flag, as a material for hive, will answer equally as well as straw for wintering, but does not look quite as well. A better quality of straw can be secured in the harvest field. Select it by handfuls, make it even, shake out all short ones, cut off the heads, and put away to be made into hives, some rainy day before December.

It is unnecessary to look for a second swarm, when the first issued sixteen or eighteen days before. Not one in 500 will vary from this rule. Perhaps not one in a hundred will issue after 14 days—and usually not after 10 or 12.

In the last sentence of the Apiary for June, for *other edge*, read *under edge.*

Containing a great variety of Items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

Republishing Articles.—We are very often requested to republish some particular article, and have now a letter before us asking for the reproduction of an article which appeared only a little over a year ago. It would be very easy to make up a paper by reprinting old articles, but we are obliged to keep moving on. To meet such requests as these we have always on hand plates to print the numbers for several years back, and can furnish any single number or volume.

Are they Reliable.—A correspondent in Princeton, N. J., wishes to purchase a large number of strawberry plants, and desires to know if he "can implicitly rely apon those sent out by——or——, as being true to name." We refer to this as a sample of many letters we do not notice. We cannot undertake to specify in these cases. Their advertisements being found in the *Agriculturist* is proof of their general respectability as dealers, and we cannot go beyond this. It would be impossible for us to say that any nurseryman can be "implicitly relied on" to send plants true to name, as those with the best possible intentions are liable to be deceived by others, or to be mistaken as to the identity of a fruit. It very often happens that, to meet the demand, a nurseryman propagates a large stock of a variety before he fruits it, and then finds to his mortification that he has been selling the wrong thing. Mistakes like this are almost impossible to avoid.

Delaware, Maryland, and Virginia Farms.—To many inquirers we must answer that there is good land for sale in the States above named, as well as everywhere else almost. A man can afford to buy poor land which is close by railway facilities, and thus within such easy reach of the great markets, that he can dispose of early vegetables and fruit at the best prices. If further off he must have better land, or some other compensation. Northern farmers are going in considerable numbers into Maryland, Delaware, and Virginia, and if they will only take with them the industry, frugality, and intelligence which would make them successful in New-York and New England, they will succeed well in their new homes. Never buy without seeing the land and knowing exactly what you will surely know within a week after your purchase is made. Take nobody's word for any thing you can see and judge of.

Missouri Lands.—By reference to our advertising columns in this issue, will be found the advertisement of the MISSOURI LAND COMPANY, of St. Louis, who are prepared to furnish all necessary information regarding land in Missouri, and at all times facilitate the immigrant, or the agents for colonies, in securing the best and cheapest lands in the State. Heretofore the settler designing to purchase has been compelled to ramble over the State, trusting to chance or local land agents for such information as they may gather. This company is organized on a very broad basis, having its local agents in every county, enabling them to secure the most complete information, and make their office the Real Estate Exchange of the State. The State presents many attractions to the enterprising immigrant. Mountains of iron, mines of lead, copper, etc, millions of acres of fertile soil, its central position, and temperate climate destine it to be in the future one of the most important States. It has thrown off the incubus of slavery that so long has impeded its progres, and now as a *free State* offers homes to all enterprising men. Missouri stands on the highway of the nation, between the Atlantic and Pacific. Notwithstanding the havoc of war, its railroads are fast approaching completion. The disloyal inhabitants impoverished by the war, are selling their improved farms very low. The Company furnishes information and answers communications free of charge.

Corn for Dry Fodder.—E. W. Allen. When the corn has its full size, cut it at the ground; let it wilt in the sun a day, turn and sun it another day; bind with straw in small bundles, say 8 inches in diameter; set the bundles up bracing to sustain one another in long rows 2 and 2, or set them against rails or a fence, or in very open stooks. Thus they will gradually dry sufficiently in about two weeks to put up in large round stooks, capped to shed rain. Before cold weather stack near the stock yard or put in the barn.

How to Bring up Sandy Land.—James Clayton, Mason Co., Ill. writes: "We have a good deal of land in this county on which nothing but rye can be grown, it being nearly clear sand. What is the best way to improve this sandy soil?" Such land may probably be brought up in two seasons so that a tolerable crop of clover may be raised, and after that corn, wheat and roots will follow in a few years. Buckwheat sown now on land which has a small dressing of some ammoniacal manure, 100 to 150 pounds of guano, or 200 or 300 pounds of bone dust per acre, will give a good growth probably. Plow this under soon after the first blossoms appear, and then sow rye. In spring, say by the middle of May or first of June, when the rye begins to head, turn it under and sow corn or sorghum broadcast, (or in drills if the land is weedy, which it probably is not) and plow this under in August, and if desired, buckwheat or turnips may be sowed, (the latter quite thickly)and this crop plowed under; the buckwheat before frost, or the turnips before hard freezing. After this you will be able in all probability to get a good crop of red clover, which means wheat or any thing else, (after it) provided the same system is kept up, and a well manured crop is introduced once in about four years.

Does Plaster, Guano, etc., Hurt the Land?—"R. B," Portage Co., O.—No! not if properly used. If these things increase your crops, you must give back to the soil in proportion to the amount it yields, the ingredients which constitute the earthy part of plants. If this be neglected then in a few years with your big crops you will accomplish the same amount of exhaustion which it might have taken many years to have done without any high-pressure fertilizers.

How to Use Bones.—"Leslie." After breaking them up, compost with horse manure. Fork over the heap bye-and-bye, and throw out the hard ones, mash the others; make up another heap and use the hard bones again with some fresh ones. Another way is to break them as small as you can and throw them all into a heap, sprinkle them thoroughly with water, heap a layer of soil over them and let them heat. Keep a little plaster sprinkled over the outside of the heap. After they have heated well for some weeks, fork or rake the heap over; compost the fine part any where you like, and subject the rest to a repetition of the process. The broken bones, after soaking with water several days, may be treated with oil of vitriol, (half-water) added pretty freely, and the heap worked over with a shovel. A large part of the bones will be converted into superphosphate, and may be applied mixed with saw dust or earth.

How to Break Bones with a Sledge. L. A. Gavineau. Find a log with a hollow say 14 inches in diameter. Saw this so as to form a ring about a foot high, and split or saw a piece out of the side, leaving the ring like the letter C. This partial ring is placed on a rock or other hard and heavy base; the bones, one at a time, are placed in the middle of it and struck with a sledge hammer, which should be so held that the pieces, or the unbroken bone, if the blow does not crush it, will not fly through the opening made for the handle of the sledge. With patience bones may be broken in this way, but every community should have a good mill.

Liquid Manure.—"W. R." has a quantity

of hen manure, which he wishes to use in the liquid form. A peck or so in a barrel of water will make it quite strong enough. This should not be put upon the foliage, but over the roots of plants. It is better to apply it weak and have it diffused in the soil, as far as the roots extend. Once or twice a week will be often enough, and if possible apply it just before a rain.

What I found in a barrel of Poudrette.—Lemuel Church, writes: "In a past number of the *Agriculturist* I saw it stated that stovepipes, water buckets, etc., etc., were taken from the night soil *before* it was prepared for poudrette. I found *in* a barrel of poudrette a year or two ago, the following articles: coal cinders, ashes, burnt and unburnt bones and shells, pieces of earthen, stone, glass and china ware, pieces of window and looking glass, pieces of black, blue, green and white bottle glass, pieces of tobacco pipes, bricks, lime and cement, shirt and other buttons, nails, feathers, rosin, peanut shells, piece of lobsters claw, pins, piece of comb, a dress hook, hair pins, shavings and pieces of bark, isinglass, a pair of sleeve buttons, a hog's tooth, a marble, whalebone, rattan, straw, fish scales, pieces of springs of hoop skirts, wire, leather, rags, egg shells, piece of slate, a carpet tack, matches, corn, oats, seeds of dates, oranges, watermelons, muskmelons, and raisins, two kinds of seeds name not known, cherry stones, saltpetre, a child's toy of turned wood, dead leaves, etc., etc., etc." A curious compost, truly!

Quantity of Turnip Seed per Acre. "A. H. J.," Morris Co., N. J., asks of the *Agriculturist*: "How much turnip seed is required to sow an acre broadcast." There is no rule that can be recommended to suit different kinds of turnips, and a variety of soils. If the seed is good, and the soil in fine condition, one pint will be sufficient to seed it well, if distributed evenly. Mingle the seed with eight or ten quarts of gypsum, dry sand, or ashes, and sow both ways. Divide the seed into as many parcels as there are rounds sown. (A round has the width of two casts—forth and back.) In this way the seed can be scattered very uniformly. If there is danger that the turnip fly will destroy more or less of the young plants in the seed leaf, better sow one quart of seed. Then, if they are too thick, after the tops are too large to be injured by the fly, go through them and thin out with a broad hoe or a bayonet hoe. A man can thin a large patch in a day.

Merits of Dwarf Broom Corn.—Elias Reed, of Lucas Co., O., writes to the *Agriculturist*: "The proportion of limber corn in my crop was comparatively small, probably not more than one sixth part of the whole. But, without this, I know not what we should have done for the middle of the brooms, as the greater portion was only suitable for wrappers. Those who have seen the brooms made of this corn acknowledge that they are very nice and elastic. The stalks of this variety, if cut up as soon as the corn is pulled off, which is the usual manner of harvesting it, afford more fodder than I know how to raise from any thing else, on the same ground. The leaves of the dwarf corn are large and numerous, of course they absorb from the atmosphere more nourishment than small ones. The stalks are well covered with husks which, if properly cured, make nutritious feed for stock. It is doubtless two weeks later than the tall variety, and therefore should be planted early and on rich soil." Our readers will remember that we have published reports unfavorable to this variety. Each kind has its strong and sensible advocates.

Tree Protectors.—These are mostly constructed with a view to prevent the wingless female insect from crawling up the trunk of the tree to lay her eggs, from which the destructive worms (*larvæ*) are hatched, as noticed in an article on canker worms. Seymour's Patent, manufactured by P. & F. Corbin, is very simple in principle, easily applied, and durable. "Canker" worms, and all that come from crawling ancestry, will be effectually headed off by their careful use.

Weighing on the Farm, of grain, wool, cattle, etc., would in many instances be of great advantage to the producer. With a good scale at hand, there will be no need of estimating in selling produce by weight. The increase of stock under different modes of treatment can be correctly noted, thus enabling one to judge of the proper management. Fairbanks' scales advertised in this paper, have a long tried and fully sustained reputation for accuracy and durability. Their manufactures are we believe the most varied and extensive in this country, if not in the world.

Lightning Rods.—Some one concerned in the sale of a patent lightning rod, writes to say, that the article published in the June *Agriculturist*, upon the structure of lightning rods, does him great injustice. To which we reply, we can not help it. We gave some general principles, such as are recognized by scientific men, and if this is unjust to any patented notion, so much the worse for the patent. Now, we have not the least doubt, that most of the patented rods will protect a building, if properly applied, for they generally fulfil the essential conditions stated in the article referred to, and the patented portion usually applies to some unimportant peculiarity, which it is easy to make people, who understand nothing of the subject, believe to be essential. As we never before heard of our correspondent's rod, we certainly had no reference to him, and as his especial grievance is, that the article recommended iron, while he sells copper rods, we will say that copper is a much better conductor than iron, and that a rod of copper of a given size will conduct electricity much more readily, than an iron one of the same diameter. As an iron rod, sufficiently large and properly placed, will afford adequate protection, it is generally used on account of its greater cheapness and stiffness; but there is no reason why those who choose to do so, should not use copper.

Clothes-Wringers have deservedly become a household institution in the land, to the great satisfaction of the housekeeper, and the benefit of those who have to pay for clothing. From several years' experience with the Universal Wringer, we believe it has paid for itself every year in the saving of the wear of garments, to say nothing of the relief to the wrists of the washerwoman. We have sent out hundreds of these implements as premiums for obtaining subscriptions to the *Agriculturist*, always with satisfaction to the recipients, and we have yet to hear of a family where they have been thrown aside from dislike, after being well tried.

Mixing of Squashes.—"Long Island." Different varieties will mix, but the readiness with which they do so, seems to vary. We have excellent authority in proof that squashes and pumpkins will form a cross. As to the question whether the results of such a mixture will be manifest in the fruit, or only be seen in its progeny, it is one upon which we have but little positive information, and concerning which we should be glad of facts. We have given, last year, all the proof upon this point in our possession. The general belief is that the fruit is not affected, and we know one large cultivator who grows the different varieties in proximity, and says he can discover no change in the fruit, but that he never plants seed of his own raising for fear of crosses. Please give us the result of the planting of your squashes and pumpkins near together.

Canada Thistle.—A Canada correspondent is "in a state of mind" because this farmers' pest is in our country called after *his* country, and thinks it is in some way an unmerited reproach upon Canada. If we had had the naming of the plant, we should have spared our neighbors over the border, but as it is now we are obliged to use a generally recognized name. The British subjects dignify one of their troubles as the American Blight, so we don't see but the account is square. We suppose that the thistle is named so because the plant first found its way to this country from Europe by the way of Canada, and the people of that country ought to be made to suffer a little for giving such a rebel aid and comfort, until he was strong enough to make a raid across our borders. If it will comfort our Canadian friend, we will admit that *Cursed* Thistle, one of its European names, is more expressive and appropriate.

Grapes and Wine.—O. D. E. It is not possible to make *wine* from unripe grapes. If your grapes have a "very thick skin," the variety is probably not worth cultivating. It makes but little difference whether they drop or not. It is likely that the juice of green grapes, with the addition of sufficient sugar, would make a liquid which some people call wine, as will the juice of rhubarb stalks, but we don't encourage the making of such stuff. We shall probably have something to say of wine-making at the proper season; in the meanwhile see article in last October's *Agriculturist*.

Grape Vines in Pots.—M. H. H., Mount Pleasant, Iowa, writes to know how to dwarf a grape vine so that it will grow in a pot. Our native vines may be grown in pots for amusement, and we should select the Delaware for the experiment. Plant a 1-year old vine in a large pot, and treat as we directed April, 1864.

Vine Culture at the South.—The gentleman who advertises respecting vine culture in the Southern States, comes recommended to us as one of experience and reliability, and one whose reputation is worthy the attention of Northern capitalists.

Asparagus Beds and Currant Bushes.—"Subscriber," Carlinsville, Ill., asks "how deep should Asparagus roots be covered with soil?" Three to four inches. "Should the seed that falls annually be suffered to sprout and grow?" No, the young asparagus plants are as troublesome as any other weed. "Does the bed need a protecting coat of manure in this latitude?" Yes, not only as a protection but for the nourishment thus afforded. See method of training the Gooseberry and Currant on page 339, November, 1863.

Training the Melon.—W. A. Duff, Wells Co., Ind. This is but little practised in our country. Pinch the end of the plant when it has made two leaves; this will cause two runners to grow, (one from the axil of each leaf) which are stopped by pinching when they have made 5 or 6 leaves, and the branches which start from these may be allowed to run, or be stopped by pinching when sufficient fruit is set.

Form of Flower Beds in Turf.—"Lady Subscriber." An oval is the most generally pleasing form. A crescent with rounded points, is very appropriate in some situations. Avoid all angular shapes or anything elaborate.

The Fuchsia drops its buds.—"M. D. W.," Portage Co., O. There are but few of the Fuchsias which will bloom during the winter, and probably your plant needed rest. The best way with Fuchsias generally is, to put them in the cellar after they have dropped their leaves in autumn, and keep them there till March or April. Then by watering them and placing them in a sunny window, they will start into a vigorous growth, and give an abundance of flowers all summer.

A Fine Azalea.—There was shown on our exhibition table a magnificient specimen of Azalea Iveryana, remarkably well shaped, over three feet across and so completely covered with bloom, as to conceal the foliage. This plant was a whole floral exhibition in itself, and reflects great credit upon its grower, Wm. John Hutchinson, gardener to F. A. Lane, Esq., Staten Island.

An Everlasting Flower for Name.—"U. B.," Adrian, Mich. The specimen is *Gnaphalium fœtidum*, so much used by the French under the name of *immortelles*, to form funeral wreaths. The seeds may be had at seed stores, and it does best in rather poor soil.

Seeding down with Hungarian Grass.—E. Wilson, Westchester Co. This millet makes so much leaf and shades the ground so much, that it is hardly possible for the grass sowed with it to get sufficient strength to bear the sun after the Hungarian grass is cut. We have seen a seeding take very well and make a good sward the first season, sowed with Hungarian grass, but this is not a usual occurrence.

Persimmon Seed.—J. L. Martin, Merrick Co., Kansas. We never had occasion to plant these; should gather the seed when the plant was thoroughly ripe and keep in sand until spring.

The Buttonwoods.—"Buttonwood" Philadelphia, asks what is the matter with some trees in his vicinity. The unhealthiness of the Buttonwood or Plane trees, extends to most parts of the country, and we have not seen a flourishing one this year. The trouble, with how much truth we cannot say, is attributed to not maturing the growth of the year before. The trouble first became serious in 1842, and since then the trees have had a hard struggle for existence, and they seem to look worse this year than ever before.

Locust Suckers.—A. J. Richards asks, If the common locust will throw up suckers if raised from seed. Yes. It will sometimes sucker under any circumstances, and especially if the roots are wounded by the plow or otherwise.

Papaw-Bark for Tying.—J. A. Whistlitt, Ray Co., Mo., uses the bark of the papaw as a substitute for bass bark to tie up grape vines, etc. The bark is removed from the tree and soaked in water until the layers separate readily, taking care not to let it be in the water too long, as it becomes weakened.

Plants in Partial Shade.—C. Days, Huron Co., C. W. Among fruits, raspberries, gooseberries and currants; of vegetables, carrots, celery, late lettuce, radishes, spinach; and probably some other things will do well when not in the sun until afternoon.

Soap waste for Caterpillars.—A correspondent takes the liquor left after making hard soap from soft by means of salt, dilutes it with two parts of water, and throws the liquid over the trees by means of a syringe; he says that it effectively destroyed caterpillars.

Muck and Lime Compost.—"F. V. F." Fairfield Co., Conn —There are so great differences in and various qualities of muck that it is impossible to compare it with any standard. Barnyard manure is about as uncertain a one as could be named. In composting with lime, use about two bushels of good oyster-shell lime (best slacked on the place) with one load (say 25 bushels) of muck. It will, if fine, make a good top-dressing for rye and may be applied in the spring, but better in the fall, at the rate of 30 or more loads to the acre. Dress grass lands with it in August or early in Autumn, rather than in the spring. In composting muck with lime, ashes, soda ash, or any such thing, spread a layer 6 inches thick and sprinkle over the lime or other article in due proportion, and make the heap of convenient hight by placing other layers in the same way. After a few weeks cut the heap down, beginning at one end, and pile it up again, shoveling it over and thus mixing all together.

How to Clear Land of Wild Carrots.—B. B. Satterlee.—Put the land in hoed crops and keep it *clean* and frequently stirred, in such weather as the seed will sprout in, for two years. Most of the seed in the ground will thus germinate and be killed. On sward land it is hard to kill them, but never letting one go to seed, and letting no seeds from the road or neighbor's fields wash on, will work an effectual riddance.

Plants named.—M. R. Allen, York Co., Me.—1, *Cornus Canadensis*, the Dwarf Cornel or Bunchberry. 2, *Smilacina bifolia*, or Two-leaved Solomon's Seal. 3, *Uvularia sessilifolia*, Sessile-leaved Bellwort. ....D. W. Hooker, Vt., the seed of some kind of Bignonia or Trumpet-creeper, but the particular one cannot be told from seed alone ...F. Schreiner, Crawford Co., Pa., the American Yew, *Taxus Canadensis*....Miss E. Noble, Shawano Co. One of the Morels, which are generally eatable fungi, but whether this is a wholesome one or not we are unable to say....J. Foulke. *Chionanthus Virginica* figured in the Agriculturist for June, 1864.... E. D. Velie, Suspension Bridge, *Oldenlandia purpurea* var. *ciliolata*, Bluets...We are obliged to repeat that we cannot undertake to guess at poorly crushed fragments; though willing to name plants for our friends we must ask them to send fair materials. One lady sends us some 25 fragments, each rolled, when fresh, in a scrap of paper and tied with a thread. To open each one of these minute bits would take more time than we can well afford. If the lady will press her plants and give specimens at least as large as will cover an envelope it will give us pleasure to name them for her.

Bottle the Fruit.—Preserves are becoming and should be obsolete. It is so easy to put up fresh fruit in bottles or jars, that every one may thus preserve almost every kind of fruit and sauce, and keep it in nearly its fresh state. We use the Baker, or Potter & Bodine glass jars almost exclusively, after having tried numerous other kinds. The ripe but not over-ripe strawberries or other fruits, are picked clean, put into a glazed vessel with a little sugar, (¼ to a ½ the weight of sugar, according to the sweetness of the fruit) and simply heated through—just boiling up once is usually sufficient. The glass jars are warmed as wanted, by plunging them rapidly into hot water a few times, then filled with hot water for a few minutes, when they are emptied and the hot fruit is dipped in carefully, to keep it as whole as possible. The jars are filled to the top, allowed to stand a minute or two, and gently jarred to cause the rising and escape of any air bubbles. They are then filled again to the top, the top edge of the jar wiped off with a damp cloth, the caps fastened on firmly, and then set away in a cellar until wanted for use. Rhubarb, tomatoes, etc., are simply cooked as for the table, and put up hot, without any sugar.

Preserving Fruit.—In May last we gave an account of Prof. Nyce's house for preserving fruits. Now, in the middle of June we have the opportunity to test some of the fruit that has been kept there since last autumn. Apples, such as Baldwin, Rambo, etc., are now as fresh, crisp and sprightly as one could wish, and the process may be regarded as a perfect success.

Blackberry Root Good for Summer Complaint.—We have great faith in a decoction of fresh blackberry root for looseness of the bowels. Last summer it completely cured a severe case of chronic southern or army diarrhœa, after the other remedies of the best physicians had proved unavailing, and it invariably cured in many other cases where it was afterwards recommended. Dig the green roots, rejecting those that are large and woody. Wash thoroughly clean, and steep in water at the rate of a quart to half a pound of the root. Boil down one-half, and then strain or pour off. Put the liquid in a bottle with about ¼ its bulk of brandy, whiskey, or alcohol, to keep it from souring, and cork tight. A tablespoonful of this, rather less for a child, is to be taken three or four times a day, say before each meal time. We would not go from home, especially southward, without taking this preparation along. The blackberry brandies or cordials made from the berries are of little account as a remedy for diarrhœa. *The virtue lies in the roots, not in the berries.*

Inquiry about Cider Mill.—C. B. R., Portage Co., O., inquires for the best and cheapest kind of cider mill, with which the apples are ground by horse power, and the cider to be pressed out without laying up a cheese with straw, and capable of making 40 or 50 barrels per day. If there are any cider mills of this capacity in existence, we have never heard of them. There are those capable of grinding apples enough in a day to make 60 barrels of cider; but the pomace must either be laid up in a cheese with straw, or a large wooden curb must be employed to retain the pomace in place. In order to make good cider, pomace should not be pressed until after it has been ground 20 or more hours. Where cider is made on a large scale, the apples are ground by water-power, or steam, and kept in large vats 15 or 20 hours before the cider is expressed. A hydraulic press may be used. By this means the grinding and pressing do not interfere with each other, and the pomace is allowed to remain long enough to secure a good flavor and color for the cider, which it cannot have if pressed as soon as the apples are ground.

Broccoli.—R. S. Cotterell, Minn. Broccoli should head the same year. It is usually surer to head than cauliflower, but is a poor substitute for it.

Mushroom Culture.—"Subscriber" will find an account of the manner of making the beds, etc., by one of our most successful growers, in the *Agriculturist* for May, 1864.

Fruit Stains.—It does not appear to be generally known that the stains of strawberries, and of most other fruits, as well as coffee stains, may be readily removed from table linen and other white fabrics by pouring boiling water upon them before washing.

Photographs of Lincoln will adorn the homes of thousands of those who cherish his memory. Those published by F. P. Whiting, in this city, are correct likenesses, and handsomely finished. The representation of "Lincoln at Home," will probably be a favorite.

The "Washington Mutual Benefit Association," for which circulars are widely distributed by mail at the West is a swindle. Atkinson Depot, N. H., is gaining an unenviable notoriety as the point whence such operations are carried on. Will not some one there enforce the law against lottery swindling?

Bowen's Microscope, advertised in many papers to be sold for 25 cents, is worth nothing.

Price of Beef—New Government Contract.—In the April *Agriculturist*, p. 107, we gave the terms and conditions of the contract for supplying the army and navy from March 15 to June 15th. The contract has been taken for three months more by the same parties, and on the same conditions, but at a large reduction in prices. The previous contract was at $13.49 per 100 lbs. live weight for first quality cattle; the new terms are $9.35, a reduction of nearly *thirty-one* per cent., or from 24 cts. to 16¾ cts. per lb. for the dressed weight, reckoning 56 lbs. dressed to the 100 lbs. live weight, which is the usual shrinkage allowed for good cattle. The contractors are pretty likely to understand the state of the supply in the country and the probable range of the market. For the terms of delivery, quality of cattle, etc., see page 107.

Exhibition Tables at the Office of the American Agriculturist.

The following articles have been placed on our tables for exhibition during the past few months. Want of space has prevented noticing them previously. This list does not include the fine show of strawberries recently held, details of which are given elsewhere:

FRUITS.—Isabella Grapes, well kept, John Cole, Staten Island.. Iron Apples; G. M. Usher, Port Richmond, N. Y.....Model of Duchess Pear, original weight 35½ oz.; Dr. I. M. Ward, Newark, N. J .. *Strawberries*. Agriculturist plant in fruit; Isaac Pullen, Hightstown, N. J. ..Triomphe de Gand; Daniel Hax, Egg Harbor City, N. J ...Russell, Green Prolific, Downer's, La Constante, Agriculturist, and Lennig's White; C. S. Pell, N. Y. Orphan Asylum....Wilson; E. D. Cadwell, New Brunswick, N. J....Agriculturist, G. M. Usher, Port Richmond, N. Y., and W. Teft, Fordham, N. Y., also from W. Teft, fine seedlings from Agriculturist....Chorlton's, Triomphe de Gand, Crimson Favorite, and Agriculturist; John Cole, Tompkinsville, N. Y....Wilson; O. F. Tilson, Highland, N.Y....Black Hamburg Grapes, cluster weighing 2 lbs., 1 oz.; John Ellis, Hart's Corners, N. Y.... Peaches, Nectarines and Apricots; John McGowan, gardener to Blakesly Wilson, Esq., Hudson City, N. J. ....Normandy Pippins, imported from England; Dr. Hall, N. Y. City.

FLOWERS.—Beautiful Camellias; Wm. Chorlton, Staten Island, N. Y....Gorgonias; A. N. Roberts, N. Y. City....Bouquet of Everlasting Flowers; Jas. Vick, Rochester, N. Y....Fine Cut Flowers; Miss M. E. Cortelyou, Staten Island . New Seedling Tea Rose; I. Buchanan, Astoria, L. I....Fuchsia; C. M. Mandewirth, N. Y. City....Fuchsia, Tulips, Narcissus, Ixia, Wistaria, etc.; C. S. Pell, N. Y. Orphan Asylum....Cut Flowers; T. Kavanagh, Brooklyn, N. Y... New Seedling Rose; Wm. H. Burgess, Glen Cove, N. Y....Fine Bouquet; Keyser's Island, South Norwalk, Ct .. Dahlias in Bloom; John Abberlee, N. Y. City....Splendid plant massed with blooms of Azalea Iveryana, and blooms of Passiflora Decasineli; John Hutchinson, gardener to F. A. Lane, Staten Island....Purple Hyacinths in bloom; Jacob Newkirk, Hudson City, N. J....Lilium auratum; Dr. Payton, N. J....Bloom of Clematis Sieboldii bicolor; W. S. Carpenter, Rye, N. Y.

VEGETABLES, GRAIN, ETC.—Fine Yellow Flint Corn, Wm. Brush, Sandwich, Conn ...Cracker, Dover, or Irish Cup Potatoes; S. P. Champney, Saunderville, Mass.... Peach Blow Potato, weight 1 lb., 9 oz.; H. G. Randall, Middle Island, N. Y....Large Turnip, weight 21 lbs.; Mr. Lott, Milford, Pa....Improved China Tree Corn; J. L. Huested, Greenwich, Conn....8-rowed Yellow Corn; J. Van Woert, Fort Lee, N J .. Carrot, curious growth Capt Nimmo, Flushing, N. Y Clover and Timothy Hay, handsomely cured; J. B., Westchester County, N. Y Large Mushrooms, Judge Sturges, New Durham, N. J . .Large Corn and Carrots; Cornelius Van Horn, La Fayette, N. J.... Deep Red Corn; H. B. Rogers, Huntington, L. I....2 Stalks Rhubarb, weight 3 lbs. 8 oz.; E. Frapwell, gardener to M. A. Ferguson, Lakeland, L. I. ... Asparagus, 19 Stalks weighing 4 lbs., 5 oz.; Edward Windust, Oak Neck, N. Y... Stalk of Sugar Cane, 24 feet long; Mr. Kirkham, Porto Rico, W. I.

MISCELLANEOUS.—Specimen of powder, used in firing the 300 pounder on Morris Island at Charleston; from 3d R. I Heavy Artillery... Squankum Marl; Thos. Winsor, Farmingdale, N. J ...Mistletoe from an Oak Tree; A. W. Roberts, N. Y. City....Sharks Teeth found in Marl, Edward Pitcher, Monmouth Co., N. J. ..Native Australian's Boomerang; A. W. Roberts, N. Y. City ...Large Brahma Pootra Egg; Mr. Saunders, Port Richmond, N, Y... Gopher Skin; L. Bishop, Jackson, Kansas ...Excellent Sorghum Syrup; Henry Marsden, Columbia City, Iowa... Large Hens' Eggs; A. E. Noble, Brooklyn, N. Y.; J. S. Heddon, Verona, N. J.; Robt. Sullivan, Brooklyn, N. Y.; W. H. Bridgens, Oyster Bay, N. Y... Bayonet from Battle Field of Petersburg, Va., Brick and Wood from Libby Prison, Richmond, Va.; O. Judd, N. Y. City ....Australian Nut, used by native girls for bracelets; Dr. Hall, N. Y. City . Perfect egg contained within another of extraordinary size; A. G. Dean, Staten Island, N. Y Wood of Apple Tree destroyed by Borers, Smith Brown, West Farms, N. Y.

Hints on Showing Poultry.—Poultry Show at the Museum.

During the last week in April a poultry exhibition was held at Barnum's Museum, at which there were not only many fine birds shown, but a number of amateur and professional poultry raisers met, and improved the occasion to make each other's acquaintance, and to talk over their pets. All the more prominent families of fowls, from the mammoth Brahmas and Cochins to the diminutive but haughty Seabright Bantams, were there. The Black Spanish, Brahmas, Polands, and Hamburgs, were the varieties best represented. It was a disappointment not to see the Dorkings, white and gray, in better display, for these fine birds, not without reason, claim the first position as the most useful for all purposes. The most symmetrical trio of Black Spanish fowls was shorn of first honors by reason of the cock having a drooping comb. The greatest merit a Spanish fowl can have, is a perfectly white face, but if a cock had the best and most faultless face that ever was seen, it would not excuse a drooping comb. Such a bird, according to the inflexible decision of all fanciers of this courtly and most elegant breed, must be thrown out of competition.

This may be a useful hint to those intending to exhibit at State fairs, and we make one more suggestion, in re-

ference to the manner in which fowls should be prepared for, and sent to, exhibition, viz.: All fowls should have their legs washed clean before they are sent to a show—scarf, or dead skin, should be removed from the comb, dry dirt from the beak, and stains from the plumage. They should, if possible, always be packed in baskets, which should be round, high enough for the cocks to stand upright in, even when crowing. The baskets should be covered with canvas. Fowls should be thoroughly fed before they leave home for a fair or show, but the food must be soft—bread, sopped or steeped, is excellent; hard food is to be avoided, because the digestion will have to take place without exercise or gravel. Let birds of white plumage run at liberty till wanted to send away. Spanish are improved by confinement in a dark place for some days before showing, giving them just enough light to enable them to pick their food and to perch—they should also be littered with straw, as cleanliness has much to do with the success. Game fowls, it is held, should be kept up for a few days and fed on bread, meal, barley, and peas; these latter make the plumage hard, but they also have a tendency to fatten, which is undesirable in games. White feathered birds, such as Silver Spangled Hamburg, Polands, etc., all require washing. This is not difficult—put a handful of soda in a bowl of warm water; immerse the fowl entirely; rinse thoroughly in cold water; wipe with a flannel and place in a basket with straw, before a fire to dry. When fowls return from a show looking in perfect health, do nothing; but if the combs are dark, or crops hard, a tablespoonful of castor oil may do them good.

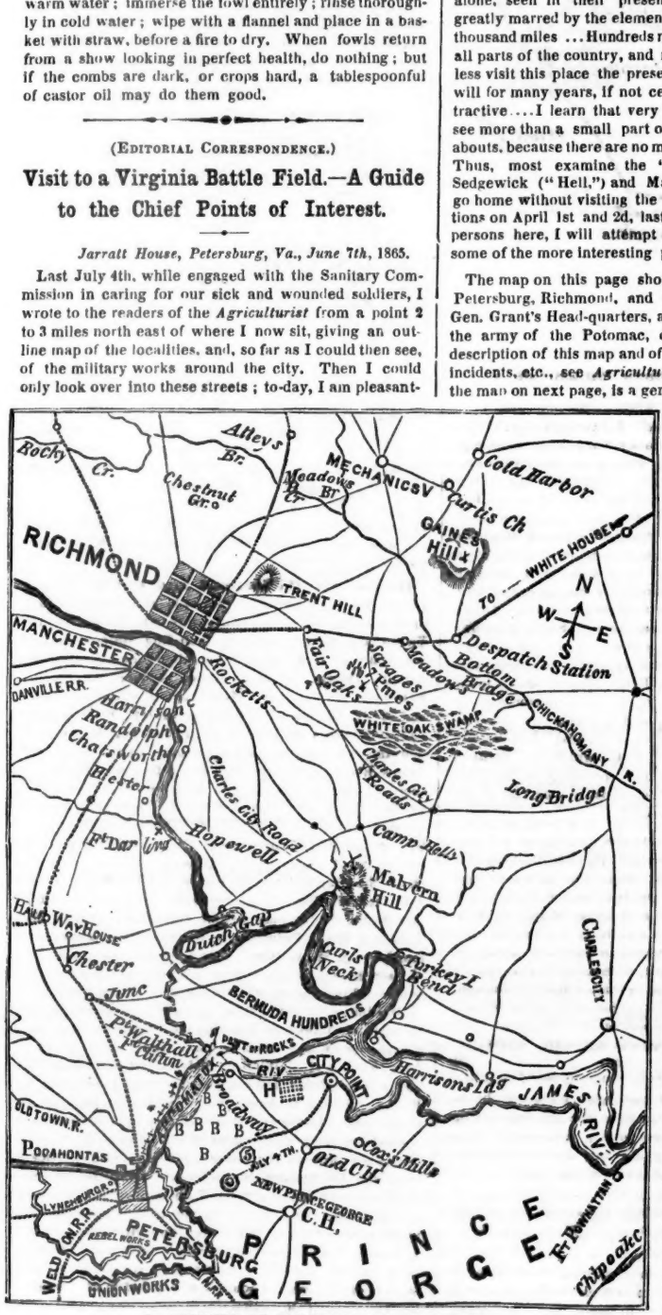
(EDITORIAL CORRESPONDENCE.)

Visit to a Virginia Battle Field.—A Guide to the Chief Points of Interest.

Jarratt House, Petersburg, Va., June 7th, 1865.

Last July 4th, while engaged with the Sanitary Commission in caring for our sick and wounded soldiers, I wrote to the readers of the *Agriculturist* from a point 2 to 3 miles north east of where I now sit, giving an outline map of the localities, and, so far as I could then see, of the military works around the city. Then I could only look over into these streets; to-day, I am pleasantly seated in the heart of the city, with my family and a party of friends. Then a hundred thousand men were intent upon breaking through the armed forces that met them at every point, and the almost unceasing roar of deep toned cannon, and the rattle of small arms broke upon the ear by day and by night. To-day, only here and there will one find an armed man in blue, and none in grey, and over the vast charnel field nought but the singing of birds, in the few remaining groves, disturbs the death-like stillness.——Then I wrote, that no other spot I had ever seen in this country or in Europe, would so well repay a visit immediately after the war should close, as the region around Petersburg. To-day I feel this more strongly than then. For three days I have wandered among the endless lines of earth-works and fortifications that belt Petersburg on all sides but the north, and I am sure that no more intensely interesting locality is to be found in the world, when we take into account the number of men engaged, the length of time they were here, the severity of the almost daily struggles, and the closing up of the great war, of which the final decisive contest was fought just southwest of this city.——That is hardly an over-estimate which gives 150 to 200 miles as the combined length of the earthworks, rifle-pits, etc., within ten miles of Petersburg. These alone, seen in their present condition, before being greatly marred by the elements, are worth a journey of a thousand miles ...Hundreds now come daily, from almost all parts of the country, and many thousands will doubtless visit this place the present year, while the locality will for many years, if not centuries, be increasingly attractive....I learn that very few of the present visitors see more than a small part of what is to be seen hereabouts, because there are no maps or guides to assist them. Thus, most examine the "Mine," Forts Steadman, Sedgewick ("Hell,") and Mahone ("Damnation,") and go home without visiting the field of the decisive operations on April 1st and 2d, last. At the request of many persons here, I will attempt to give a little outline of some of the more interesting points.

The map on this page shows the relative position of Petersburg, Richmond, and City Point. The last was Gen. Grant's Head-quarters, and the base of supplies for the army of the Potomac, during ten months. (For description of this map and of the position of the armies, incidents, etc., see *Agriculturist* for August, 1864.) In the map on next page, is a general outline of the position of forts, etc., around Petersburg, prior to April 1, this year. This sketch is from my own notes made while going over the ground, without any measuring line, or any compass save the sun: hence the distances, bearings, and angles, may not be entirely accurate, but they are sufficiently so, to greatly aid the visitor. The map is on a scale guessed at about one inch to the mile. Only some principal points are indicated. There are scores of batteries, and hundreds of short lines, small earthworks, and rifle-pits, etc., not indicated. Beyond or outside of the space covered by the map, for miles away, are to be found forts, earthworks, and scenes of skirmishes and pitched battles, as at Ream's Station down the Weldon railroad, at Five Forks several miles southwest, and also on the Boydton Plank Road, and along Hatcher's Run. The space covered by the map is cut up with lines of breastworks, rifle-pits, earth-forts, thousands of soldiers' huts still standing, and almost unending lines of abatis (ab-a-tee). These last consist of sharpened sticks and tree tops placed firmly in the ground, and leaning outward, a few rods in front of the main lines and around the forts, arranged so as to greatly obstruct the approach of an enemy. Most of the abatis are bound together by strong wires. They are being removed quite rapidly for fire-wood, by the negroes and other inhabitants of Petersburg. This, with the washing down of the many earth-ridges and rifle-pits by rains, and the leveling of others for agricultural purposes, will materially change the appearance of the whole region ere long. The main lines consist chiefly of heavy continuous banks of earth, high enough to shield the bodies of the men, too thick to be battered down by cannon, and having a ditch on the side next to the enemy. Forts and batteries are built at convenient distances along the lines, to cover the space between them, and are usually placed upon knolls, or higher portions of the ground. Some of the forts are very large and well finished, with bomb-proofs. A bomb-proof is usually made thus: a shallow cellar is dug, if the ground allow, and walls of logs are laid 6½ to 8 feet high; long log beams are laid across the top, projecting a few feet each way; upon these, a flooring of logs is placed and earth piled over, and also up against the sides, so thick as to be impenetrable by shell, thus forming a secure retreat. Air and some light enter between the cross-beams. These bomb-proofs are of various sizes and forms; one in Fort Wadsworth is about 150 feet long and some 12 feet wide inside. Ammunition magazines are similarly built. Sometimes the earth walls of the bomb-proofs, and of the forts themselves, are kept perpendicular by means of bags, or baskets of earth, or by fascines (bundles of long rods, or sticks bound together). Some of the forts are fine specimens of military workmanship, as Fort Fisher, and Forts Wadsworth and Sedgwick.

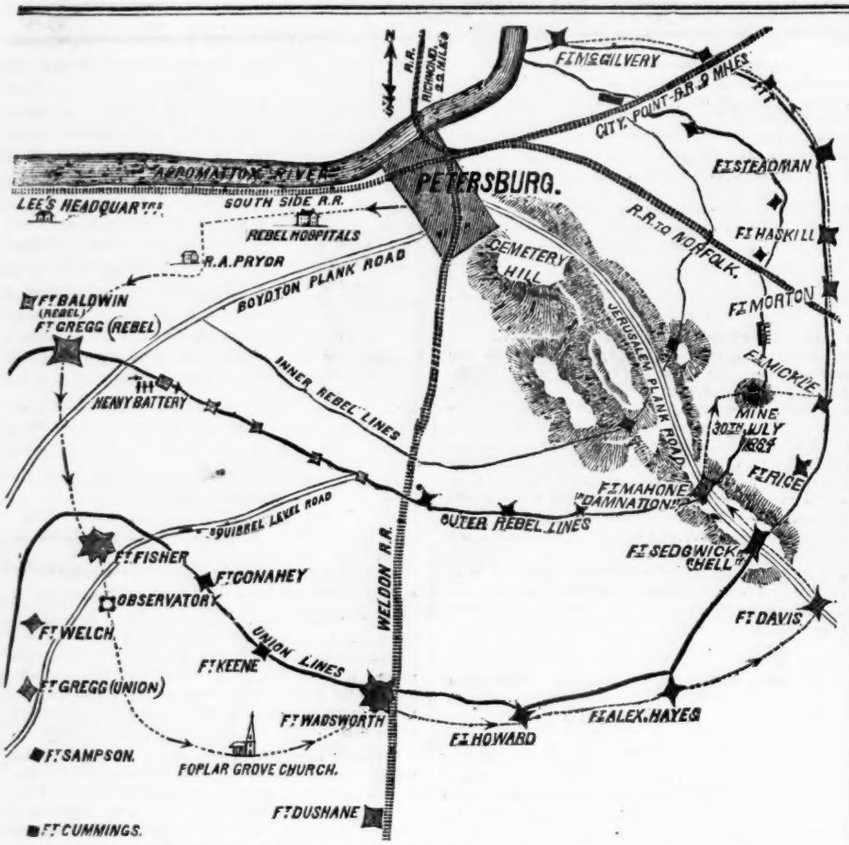


I.—VICINITY OF RICHMOND AND PETERSBURG.

The first map shows the general position of the lines last July. In August and September, Gen. Grant advanced his lines to the Weldon Railroad, and secured a second line, curving in north-west at Fort Fisher towards the South-side Railroad, which it was very desirable to reach, and which was so strenuously defended by the enemy. (See map II.) This line was retained.

The most interesting points to be examined by the transient visitor, are: Fort Gregg, (rebel,) Fort Fisher and the tower or observatory (150 feet high) near it, Poplar Grove Church Forts Wadsworth, Sedgwick and Mahone, the Mine, and Fort Steadman. On horseback, one can go the round of all these in a day, following the dotted line in the direction of the arrows, or in the reverse order, beginning at the north-east. But two or three days will be far more satisfactory. I will sketch briefly a two-days trip by a party of thirteen of us—two ladies, three children of 9 to 14 years, with four men besides the driver all in a large covered spring wagon and four men on horseback. Outfit: a box of eatables, a jug of water and cup, some bags for holding relics, a large hatchet, and field glasses to aid the eyes, brought from home. Clothing and shoes adapted to rough journey. Another valuable adjunct was a package of Daily Papers, selected from the home files, containing descriptions at the time, of movements and battles occurring at the various points to be visited, to be read in connection with the actual examination of the localities.

First Day's Trip.—Starting from the Jarratt House westward, then deflecting to the left, we passed the north side of the rebel hospitals, as shown on the map, and continued west ¼ to ½ mile, until a short turn to the left (south) took us nearly to Mr. Green's house. Then turning to the right, and passing by the negro huts, we continued west across a brook, and up a hill, going just south of Roger A. Prior's residence, situated in the grove of trees on the right. Bending to the south south-west, we followed a field road to the rebel Fort Gregg, a large prominent fort on a hill, ¼ to ½ mile from Mr. Prior's house. All along the route, so far, and indeed all the rest of the way, are seen rifle pits, breastworks, etc. On the road west from the hospitals, the chimnies in the distance (west) indicate where Gen. Lee's headquarters were before the buildings were burned on the evacuation. Before reaching Fort Gregg, we see on the left the remains of a large dam, built to overflow the Union camps, some distance southward.——FORT GREGG. There are two forts of this name, one Union and one Rebel. The latter is a point of great interest. Strong as it is, it was assaulted and taken by storm on April 2nd. Standing on the fort and looking south-east, we see the valley through which the heavy assaulting party came up amid a tempest of lead and iron. The many Union graves in front, and the mounds of rebel dead buried in its rear, with the cannon shot and bullet holes in the palisades, indicate the severity of the struggle. How flesh and blood could have lived through the fire of cannon and musketry, crossed the deep ditch, and climbed into the fort we stand on, it is almost impossible to conceive. But it was done, and this was one of the crowning achievements that secured the evacuation of Petersburg and Richmond. One will not soon tire here, looking over the wide fields on every side, and reading the description of the assault. Just west of Fort



II.—OUTLINE SKETCH OF THE LOCATION OF THE PRINCIPAL WORKS AROUND PETERSBURG, VA.

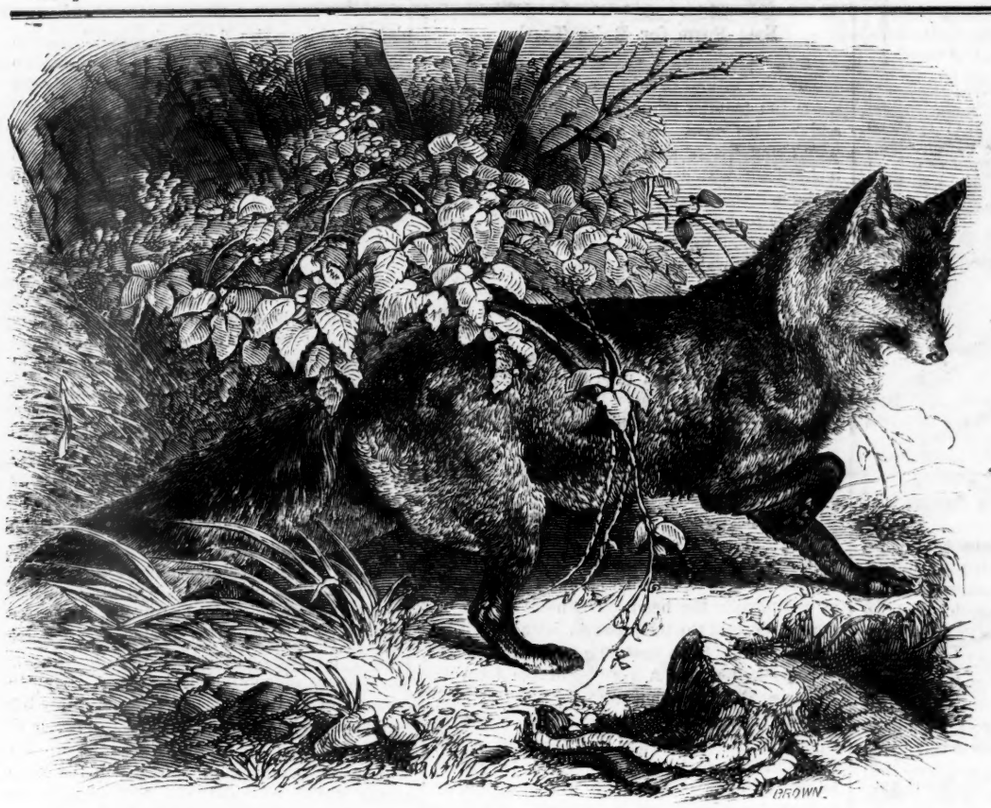
Gregg is a large earthwork called *Fort Baldwin*, and a heavy battery lies a little east of Fort Gregg. Next, going about a mile to the south-southeast, we passed through a stumpy road and crossed the outer lines and breastworks of the two opposing armies, and thence to a farm house, upon the proprietor of which we called, and had a lengthy and interesting chat. He remained here all through the war, and from him we learned many particulars of events of which he had been an eye-witness. From the high ground northeast of his house, is, to us, the most interesting view any where to be seen—including the location of the two armies from September to April, many miles of earthworks, and the scene of the final successful strategetic move of the Ufion army. Our forces had for six months held this line, including forts Fisher, Welch, etc., south of us. Frequent efforts had been made to pass around to the left and reach the Southside railroad, but without avail. The last week in March a heavy force, including Gen. Sheridan's cavalry and the 5th Army Corps, made a detour to the south, and off south-west towards Dinwiddie Court House, as if striking for Burkesville or some nearer point on the Southside railroad. To oppose these, Gen. Lee drew out a large number of his forces from in and around Petersburg, and marched them westward. This was just what Gen. Grant desired. When they were far enough off, the 6th and 24th corps dashed through from Fort Fisher, overcame all resistance, and reached the railroad a mile or so north-west of Fort Gregg (rebel). This fort and others near it were captured, and the enemy's army was thus cut in two. This is indeed the Waterloo of America, compared with which the old Belgian battle field shrinks into insignificance. We advise every one coming to Petersburg, to visit this locality and from here, and from Fort Fisher and the observatory near by, study the whole field.

Remunerating our farmer friend for his time we were consuming, and taking him with us a short distance as a further guide, we next went a little to the south-east to FORT FISHER, which is one of the finest constructed works to be seen here, though hardly so large as Forts Wadsworth, Sedgwick and Steadman. From the top of Fort Fisher, and especially from the observatory near it, 150 feet high, one has a grand view of the fields already described, and can take in at a glance many square miles of the surrounding country. At this point our entire party would have gone home well satisfied with their long journey from home, if no more was to be seen.—But I must omit details, beyond calling attention to the numerous camp huts which cover the country, a few acres in a place, for miles around. Following the general course indicated by the dotted line on the map, and looking at the fortifications on the way, we next went to the "Poplar Grove Church," whose steeple can be seen in a grove to the south-east. This Church, and the surrounding cabins—mansions we might call them—were constructed by the 50th N. Y. Engineer Regiment. Nowhere, in this country or in Europe, have I seen rustic work that would compare with what is to be seen in this camp, and in the hospital camp a hundred rods or so northwest. Without the aid of engravings, I will not attempt to describe the beautiful arrangement of pine logs, poles and twigs in the attractive structures. Let no one coming hither, fail to see them. Said a traveling companion, as he contrasted these camps and our various forts with those of the enemy, "it is no wonder our men conquered." The old Poplar Grove Church in the vicinity having been burned in the army movements, or by the enemy, this Church was presented to the trustees by the ingenious builders; otherwise we would advocate its removal to the N. Y. Central Park. Some of the huts or dwellings here should certainly be moved to more central or accesible points, as monuments of the skill of our "thinking bayonets."

Turning from the Church to the north-east, we next went to Fort Wadsworth, on the Weldon Railroad, another point of much interest. Those who have time may well go Southward to Fort Dushane, and still further to Reams' Station, and south-west along Hatcher's Run, the Five Forks, etc. Those positively limited for time, and not too wearied, may continue eastward along the dotted line, to Forts Howard, Alexander Hayes, Davis, Sedgwick, Mahone, etc., and perhaps finish up the tour in a single day, though it is too much for most visitors who wish to get a full conception of this region. Our party examined forts Howard and Hayes, the surrounding camps, of which the neatly constructed huts are still standing, and then turned up the Weldon Railroad towards Petersburg. Passing through the lines of abattis, the skirmish line of breastworks and rifle-pits, between the two armies, at the distance of 1½ miles towards the city we struck and examined the very heavy main front line of the enemy. We next visited the "lead works" on our way to the city, and reached our hotel at 7¼ P. M., most of the party wearied out, but with heads and hearts full. Retiring early, a good night's sleep put us all in good trim for the

Second Day's Trip.—Starting with the same conveyances as yesterday, we went north-east through the city, noting on the way the effects of shells upon the houses, and took the Jerusalem Plank Road to the top of "Cemetery Hill," where is a fine bird's-eye view of the works east and north-east of the city. A short distance on, we turned to the left and visited the "Mine." Our newspaper description, read on the spot, brought vividly to the mind and eye the events occuring here on the morning of July 30th, 1864. An hour spent here, and over at the entrance to the Mine, we returned to the Jerusalem Plank Road, and went south-east to Forts Mahone and Sedgwick, noting along the way the ditches and traverses through which troops and supplies from Petersburg reached the advanced lines of the enemy, through the high ground, or passed from one earthwork to another. Forts MAHONE ("Damnation") and SEDGWICK ("Hell") are very near each other, and are both on high ground. More men were daily killed and wounded at these forts, than at any other points on the lines. They were fighting almost constantly for months. To expose one's person hereabouts was almost certain death. The picket-lines between these forts, guarded by heavy breastworks, were so near that the men could talk familiarly together from behind their covers. There is more digging of the earth into pits, ditches, etc., at this part of the lines, than at any other. Passing on south-east to Fort Davis, we turned north, followed the line of Union fortifications, looking into Forts Rice, Mickle, Morton, and Haskill, and entered Fort Steadman. The taking of this by the enemy last March, and the speedy recovery of it, are doubtless well remembered by every reader. The bullet and cannon ball and shell marks on almost every square foot of the trees, from bottom to top, on every side, show plainly the fierceness of the conflict here, but I can not spare room for description. Passing on to Fort McGilvery, and back again to the main road from City Point, we entered Petersburg from the north-east side, and had a fresh view of the shell scarred and pierced houses. Every rod of the route we have taken, perhaps 15 to 20 miles in the two days, is full of interest. No other field of strife so extensive, and so varied, has ever been seen in this country, or in any other, and we trust never will be. Now, no enemies, no bushwhackers, and no restrictions upon travel are anywhere to be met with, in or around Petersburg or Richmond.—We have not space to describe the intensely interesting scenes for forty miles down the James River, from Richmond to City Point, a trip alone worth the whole journey from New York. Richmond itself is a desolation, with its miles of falling walls and chimneys in the burned district, comprising the chief business portion. On our way here, we visited sundry points in that city, including the hospitals, "Jeff's House," Belle Isle, the Tredegar Works, Castle Thunder, and especially Libby Prison, from which I have as relics, a brick from the wall where the prisoners escaped, and a piece of the table in the cell where Hon. Mr. Ely, Capt. Fraser, and other officers were confined. These will be put upon the exhibition table at the *Agriculturist* office, for the curious to look at.

Routes to Richmond and Petersburg.—From New York, there is a line of large steamers, sailing on Wednesdays and Saturdays, direct to Richmond—the Yazoo and Creole. Fare, including state-room and meals, is now $15. This route gives one a taste of the Atlantic Ocean. A better route, perhaps, is to go to Baltimore, and take the "New Line" of steamers—Leary and Brady. These leave Baltimore at 6 P. M. daily, land you at Fortress Monroe at about 5 or 6 A. M. the next morning, whence you have a pleasant day's ride up the James River, seeing the Rip-Raps, Newport News, the scene of the Merrimack and Monitor conflict, and also passing Jamestown Island, where the first settlement in Virginia was made. The village of Jamestown is burned, but the standing chimneys indicate its former site. The square brick tower or diminutive church on the upper end of the island, shows the spot where Pocahontas saved John Smith's life. You also pass Harrison's Landing, memorable as the base of the Union army under McClellan in 1862. Returning by this route, you leave Richmond at 6 A. M., arriving at Fortress Monroe at 2 or 3 P. M., and have 2 or 3 hours to loiter around the fortress, before taking the 4½ o'clock steamer, which lands you at Baltimore at daylight next morning. Through fare between Baltimore and Richmond is now $8.00, not including meals and berth or state-room. Fare between New York and Baltimore, $6.55. One can leave the boat at City Point, and for 50 cents go to Petersburg by R. R., and then to Richmond by R. R., for $1.00, or go around the other way. The railroad will probably be opened ere long direct from Washington to Richmond, taking one through the interesting scenes at Fredericksburg, the Wilderness, Spottsylvania Court House, etc. The present hotel charges in Richmond and Petersburg are $4.00 per day. The weather is becoming hot for travel now, except to the strong and vigorous; though with care in diet and drink, our party have had no trouble as to health. Every one journeying southward at this season of the year, should carry a bottle of prepared blackberry root decoction, (described on page 206) or at least some extract of ginger. ORANGE JUDD.

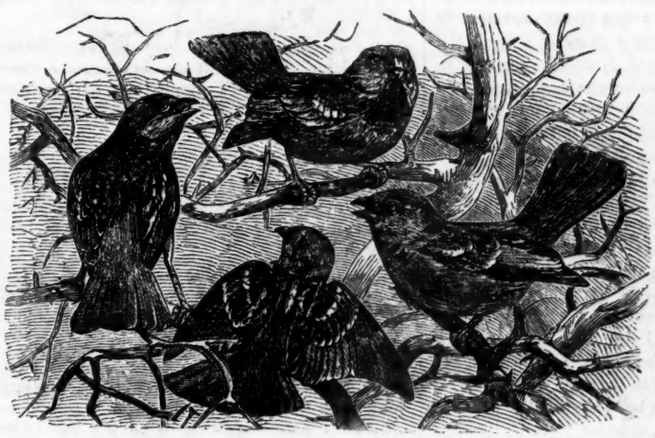


The Red Fox.—(*Vulpes fulvus.*)

We give here an engraving of one of the greatest nuisances to farmers living in the vicinity of ledges, in which a fox can readily burrow in the rocky debris. The nocturnal depredations of a pair of old foxes, who have their young to provide for, will often extend over an area of several square miles, and so sly are they, and so well do they cover their retreat, that it is very difficult to find where any particular fox has his hole. These animals secrete a powerful odor which is in a gland near the base of the tail, and the odor being diffused more or less wherever they go, it is very easy for dogs to track them; but wary and fleet, they usually succeed in baffling their pursuers, leading them a long chase, and getting away at last. Wherever met, the fox is an enemy, and is killed if possible, yet they abound in well-peopled districts both of this country and Europe. They will eat fruit, and small animals which they kill themselves, not unfrequently killing lambs several weeks old. They eat also fresh meat, provided it has no scent of man upon it. By means, therefore, of poisoned meat, it is often practicable to destroy them. Those who are most successful use strychnine, which they insert in small quantities by means of a quill, in many places in a fowl or small animal of some kind, handling it with gloves, which are sometimes scented with oil of Rhodium, a flavor of which most animals are very fond. Such poisoned meat is of course equally deadly to dogs and cats as to foxes, and some family pets might thus be sacrificed, unless care were taken so to suspend it that it shall fall in the way of foxes only. There are statements, which we deem reliable, of strychnine having been used with excellent effect in protecting sheep from other canine animals besides foxes and wolves. And if any of our readers thinks he would rather lose a few sheep than poison any neighbor's dog, which might visit his sheep pastures, we warn him that strychnine is surer death than even lead to any dogs that may swallow it.

European Sparrows in America.

Every one who has visited Europe may have noticed the sparrows which are so abundant in the cities and villages. They live upon insects, bits of offal of various kinds, grain, crumbs, etc., being regular scavengers, and, especially in breeding time, consume immense numbers of insects, which are said to be the chief food of the young birds—though the appetites of old birds crave a greater variety of food. In some parts



EUROPEAN SPARROWS.

of England there exists a prejudice against the sparrows, because, like the other finches (for they belong to the finch family), they eat grain, and a price is set upon their heads. Some few years since, quite a large number of these birds were imported and set loose in the Central Park, with the anticipation that they would multiply and make themselves at home in this city, where we so greatly need something to destroy the insects which are such nuisances upon our shade trees. They did not stay where they were, but drifted across the Hudson, and took up their abode (at least some of them did) in Jersey City and Hoboken, where they are now quite numerous in some parts of these cities. The prejudice against them is probably unfounded, at least if their great destruction of insects be taken into account. They are lively, chattering creatures, very active, somewhat larger than our ground sparrow, and darker colored. They have little or no beauty, and no agreeable song, but stay with us all winter.

Raising Turnips, on Heavy Soils and Stumpy Grounds.

On some soils and exposures large crops of excellent turnips may be raised with little labor, while in many other places much labor and manure are essential to produce even a small crop of only fair quality. On some soils turnip seed may be sowed broadcast after a crop of barley or oats has been removed; and the yield will be four or five hundred bushels or even more per acre, having but little or no cultivation or weeding. On other farms, where the soil will yield 50 bushels of barley, 70 of oats, or 25 or 30 bushels of wheat, a farmer might despair of producing a crop of turnips that would half pay the expense of cultivation, after one of these crops of cereals has been removed. Ill adaptation of the soil to turnips is one chief difficulty; another is the turnip fly. To guard against the ravages of these insects, through some sections (as in Central New-York) it is customary to sow the seed more than twenty times as thick as necessary; and then, as soon as the turnips appear in seed leaf, scatter dry ashes over them with a fine sieve. Most of the thinning is done with a broad hoe, as soon as they are large enough, and out of danger. This is done in the heat of the day, as the plants that are rooted up will die readily. The hoe is drawn across the drills, leaving groups about 10 inches apart. The thinning is then finished by hand, leaving the best plant in the group standing. Those that are pulled up, are placed around the standing ones, and operate as a mulch to keep the soil moist. We have found that after turnips form six or eight leaves, and are as large as the little finger, the occasional application of weak liquid manure, after sundown, is productive of excellent results. It is sometimes desirable during this month, to sow turnip seed on "slashing" or new ground that cannot be

plowed on account of roots. Remove the logs and burn over the entire ground if possible, between the 20th and 30th of the month. If there are any grass plots, sheep may be confined in the field, until they have gnawed every green thing close to the ground. The manure thus left operates as a good top-dressing. It is said also, that this preparation with sheep is a perfect preventive of the turnip fly. Be this as it may, the turnip fly has never injured our turnips after sheep had been confined for several days on the ground. The seed is then sowed and the ground harrowed eight or ten times, if it had not been plowed. If mellow earth can be obtained without so much harrowing, the seed is bushed in. Plots of weeds, thistles and grass may be grubbed up with hoes. By these means pretty good turnips can always be raised on heavy soils, and on stumpy land.

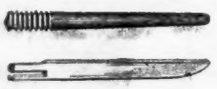
How Long to Make Plow Beams.

While there are various ways among some manufacturers of plows, for determining the correct length of a beam, many plow makers have no regular rule for fixing its length, and so every beam is made "by guess." If a beam looks too long, it is cut off. There is a correct length for every plow beam, and if that length be increased, or diminished, the draft, or "balance" of the plow will be incorrect. We have ever maintained, that if a plow is constructed on correct philosophical and mathematical principles, with the beam of the right length, and the draught properly adjusted at the clevis, it will run without holding and plow well, unless some obstruction throws it out. We have made inquiry of manufacturers for more than twenty years, concerning the correct length for plow beams, and found it all guess work in every instance but the following. Solomon Mead, New Haven, Ct., communicates to us a rule which he has adopted in determining the length of beams, for his conical-mold-board plows. In order to put this principle to a correct test, we visited his farm and had his No. 6 adjusted to run about 5 or 6 inches deep, and to cut 10 or 11 inches in width. The draught ring was fixed in the middle of the end of the beam. Having adjusted it as nearly right as practicable we let it run alone, and plowed around the land some six or eight times in succession, without touching either of the handles, except at the ends of the land, in turning out and setting in. As the principle is not covered by a patent any one may adopt it.

This is the rule: Hold one end of a ten-foot pole, with no sag in it, on the share or mold board, at the supposed centre of resistance, a point about 2 inches higher than the sole of the plow, and elevate the other end 4 feet and 2 inches—about the height of a horse's shoulders. If the beam is of correct length, a produced horizontal line (say the edge of a 2-foot rule) crossing the end of the beam in the middle will touch the edge of the pole. If the length of the beam be increased, the forward end must be elevated, in order to be in the correct line of draught. When a plow is properly balanced, it will run as straight as the team travels, without holding. But when it turns quickly aside, either to the right or left, and the plowman is required to hold it constantly in position, it is a certain evidence that there is an imperfection in the mechanical construction of some part of the plow, or it is incorrectly adjusted as to the clevis, guage wheel, length of traces, or draught chain.

Best Form for Rake Teeth.

The illustrations of rake teeth here presented show the manner of making both iron teeth and wooden ones. Iron ones, (A,) are made of wire about $^{3}/_{16}$ of an inch in diameter, 6 or 7 inches long, with a thread cut on about 1 inch of the end that screws into the rake head. The ordinary round, wooden teeth in hand rakes are too short, both for raking hay and grain. When teeth are too short, it becomes necessary to press down very hard on the handle, or the rake will fill with a small quantity and slip over. This is particularly true when raking and binding grain. If the teeth are 7 or 8 inches long, a man can rake very much easier and faster than when they are only 3 or 4 inches long. For raking grain, the writer



has been accustomed to cut off the wooden teeth of common hand rakes, and bore holes in the tenons of the wooden teeth just large enough to receive the iron teeth, when screwed in so firmly as not to split the head. The holes should be bored true, and the teeth put in with a pair of strong pliers. Such teeth in a good head make an excellent rake. A very desirable form is shown at B, for wooden teeth for a buck rake, as well as for horse rakes. The tenon is square half its length, and the other half at the end is made round. A thin piece is left parallel to the tenon to fit closely to the outside of the rake head, and a wood screw or nail fastens it securely to the head. This is a very strong way of securing rake teeth. The points should always be sharpened, like the figure, on the under side, so that they will run out of the ground instead of into it.

How to Cultivate Hoed Crops.

The aim should always be to dig or tear up as much grass and weeds as possible, and pulverize and stir all the soil between the rows at least two or three inches deep. In order to do this effectually, the teeth of the cultivator should be adjusted to run between the rows in the narrowest places, without disturbing the growing plants. The handles of the cultivator should extend back of it sufficiently far to enable the man holding it to see distinctly whether the last tooth, as it passes the hills, does not cover or cut them up. Thus he may run the implement so closely to every hill along one row, that very little labor will be required with hand hoes. When he returns between the same rows, the cultivator should be run as close as practicable to the next row.

It is essential in using any kind of a cultivator, that the horse be well guided. If he go in the right place, it will be easy to hold the cultivator so as to perform the work well, but otherwise the work will be done in such a manner, as to require much hand hoeing. Where the ground is not strong or lumpy, if a man be a good driver, he may run the rear teeth of a cultivator so closely to the rows of Indian corn, sorghum, broom corn, beans, etc., that mellow earth will be turned just up to the plants, completely covering all small weeds and grass. When cultivated in this manner, unless there are many large weeds to cut up, two hands will do the hoeing well, as fast as one can run the cultivator. When the implement goes jumping and skipping along, while the horse is two or more feet from the proper place, it will require four or five faithful laborers to hoe as fast as one man can cultivate. In order to do this work well, the teeth should always be kept sharp and bright, so that the earth will slip from them freely. When the surface of the teeth is covered with much rust, they should be polished on the grindstone, and oiled to prevent rusting, if to stand idle for a day or two. This will always save time and labor.

What is "One-Horse Power?"

The use of the term "horse power" is very common, yet few, except good mechanics and engineers, attach a definite meaning to it, but regard it as indicating loosely, about the power which one horse would exert. It is, however, when used in the sense under consideration, as definite as possible, and means the power required to lift 33,000 pounds avoirdupois one foot high in one minute.

A horse hitched to the end of a rope over a pully one foot in diameter placed over a deep well, traveling at the rate of about 2½ miles per hour, or 220 feet per minute, will draw up 150 pounds the same distance he travels. The force thus exerted is called in mechanics, a "horse power," it being an approximation to the average amount of continuous power it is fair to demand of a strong horse. If we multiply the weight raised (150 pounds) by the number of feet it was moved per minute (220), the product will be the number of pounds which the same power would raise only one foot high in the same length of time, (33,000 pounds.)

The dynamometer is an instrument made for measuring power, particularly that exerted in drawing. Those used for testing the draft of agricultural implements are simply very strong spring balances, or spring steelyards, graduated to indicate the power required to raise any weight, within reasonable limit, at the rate of 2½ miles per hour. When we apply the dynamometer, in ascertaining the draft of machines, if the index indicates 150 pounds, it is shown that the horse is required to draw just as hard as he would do, if raising 150 pounds out of a well with a rope over a pulley one foot in diameter, at the rate of 2½ miles per hour, and so for other weights.

The velocity at which a team moves is to be considered, as well as the weight to be raised, or the load to be drawn. If a horse travels faster than 2½ miles per hour, while raising 150 pounds out of a well, he exerts more than one-horse power. If he walks slower than this, he does not exert a force equal to one-horse power.

In ascertaining the draught of a plow, or reaper and mower, by driving faster than 2½ miles per hour, the dynamometer would indicate more than the correct draught; and by driving slower, the draught would appear to be less than it really is. In testing the draught of machines a team should always move at the rate of 2½ miles per hour, or 220 feet per minute, which is the universally accepted rate with reference to which dynamometers are graduated, and an easy one to which to approximate in driving with almost any kind of team.

Many people have supposed that 300 pounds —two-horse power—represented the same force that a team would exert, when dragging 300 pounds along on the ground. A horse can haul 600 pounds on the hard ground, with ease; but he could not draw hard enough on the dynamometer to mark more than 250 to 300 pounds, except for a few minutes. The power of a man is estimated at one-fifth of a horse power.

Sharp Mowing-Machine Knives.

The cutting edge of all kinds of knives is composed of numerous small saw-tooth like scratches made by the file, grindstone or whetstone. The same exists on the edge of a razor, but there they are exceedingly fine. The cutting edge of a grain sickle consists of very fine teeth made as a file is cut, with a sharp cold chisel, cutting creases sloping obliquely backward on the under side of the blade, extending quite to the edge. When the serratures thus formed become battered, or bent over, the tool is dull; but so long as they are kept sharp-pointed and erect, which is done by grinding on the smooth side, the edge is sharp.

For cutting straw, hay, or cornstalks, when knives are worked with a drawing stroke, they are usually most effective if their cutting edges are made of coarse serratures, as when ground on a rather coarse stone. On the contrary, when knives operate with a direct stroke, the finer the edges are ground, the easier they will cut. This is particularly true of knives of mowing machines. If ground to an edge on a stone of fine grit, and then whetted with a fine whetstone, even the momentum of the cam which works the knives will be almost sufficient to cut an even swath through heavy grass. Where the ground is smooth and hard, and the grass not very thick at the bottom, and the knives of a mower are sharpened with a fine-gritted whetstone, no difference can be perceived in the exertion of the team, whether the mower cuts a full swath, half of one, or none at all. Dull knives, however, or those having a coarse edge, will require sometimes twice as much power to mow heavy grass, as if they had been put in order with a fine whetstone. Knives of mowing machines are often filed to an edge. If they were operated with a drawing stroke, they would cut grain better than if sharpened with a fine stone. But, as the cut is a direct or crushing one, they should always be rubbed after filing, with a fine stone. Great efficiency in such knives depends almost entirely on the perfection of the cutting edge.

Suggestions about Summer Fallows.

A few years ago, most farmers in our wheat-growing regions, thought that in order to raise a good crop of winter wheat, the ground must be well summer fallowed. The ground was plowed usually about the first of June, and then harrowed and plowed alternately until September. In some instances, it was plowed six, but usually three times; and those who did so, fancied that they received ample remuneration in an increased amount of grain for every additional plowing. But, when the ground was broken up late in June, or the former part of July, and plowed only twice, as a small number of cultivators were accustomed to do, the work was pronounced as "only half done;" and the difference between the crops where the soil was plowed five or six times and only twice, would often justify such a remark. Thus it will be perceived, that the soil yielded only one crop in two years, or as it was then termed, "two crops in three years," as oats, or Indian corn, followed by wheat, and then a summer fallow, or grass. In some instances, three crops of winter wheat were raised in succession. As only a limited quantity of manure of a very inferior quality was made, summer fallowing seemed to be essential to the wheat crop. There was not that demand for pork, beef and mutton that now exists. Consequently, only a small portion of the coarse grain of the farm furnished any fertilizing matter by making manure while fattening stock. The great bulk of the manure was of a strawy character, and only increased the already too large growth of straw. There was but little grain-producing material in it. The good effects of summer fallowing began to fail. The straw was often large enough to yield forty or fifty bushels of excellent wheat per acre; while there would sometimes be not more than ten or twelve. Every year the heads were growing lighter and shorter, and the kernels smaller and smaller. Consequently those who were accustomed to rely on the wheat crop for their revenue, were in a grievous dilemma. This was clean farming, but low culture; while scientific, progressive agriculture requires high cultivation and fertilization in close connection with clean farming. This is the certain tendency of summer fallowing. It is good for wheat, temporarily; but bad for the farm, and worse still for the farmer, permanently. Summer fallowing in the way alluded to, will produce a greater yield of wheat, for a year or two, than any other system of management; but, at the same time, the productiveness of the soil will be impaired in a greater degree than by some other system of management, which will always keep the soil good, and at the same time, produce remunerating crops from year to year.

Prevention of the Hoove.

When neat cattle and sheep eat too much red clover, their stomachs soon become so much inflated with gas, that without immediate relief they often die in a few hours. We have known neat cattle to be hoven and die, in defiance of all efforts to save them, even after they had been grazing in a clover field more than two weeks. Where they can have access to other grass, they will seldom eat enough clover to make them bloat; but, as soon as they are required to subsist entirely on red clover, unless they have free access to an abundance of salt, there is great danger that they will eat too much. We have always been accustomed to keep salt in a tub in the field, where the stock were grazing on red clover; and the animals would eat freely of it many times a day; and we never had an animal affected with the hoove, as long as the salt tub contained a good supply.

Check Reins for Draught Horses.

The head and neck of a horse assist in balancing his body, when not restrained by a taut check rein; just as the arms of a man enable him to walk with more ease when they are unconfined. When a check rein is so short as to hold the head of a horse higher than he is accustomed to carry it, it is impossible for him to travel or draw easily. A man can walk or run much more advantageously with his arms free, and his head and shoulders thrown a little forward, because they are important balances for his body. If draught horses have check reins, they should always be unhitched when they are hauling a heavy draft, especially up hill. If one watches the movements of a horse's head when he slips on ice, or a pavement, he will soon be satisfied that draught horses should not be checked up much. Carriage horses may be made to hold their heads high; but those which have hard pulling should be allowed to do it in the easiest manner, with their heads held naturally.

Hay Cured without Drying.

SUGGESTIONS FOR EXPERIMENTS.

With us all it is a great object to make hay of good quality with little labor. We all have our notions and prejudices, some well formed and others simply prejudices. The Agricultural papers have of late contained several articles on curing hay with very little drying, packing it away so as to exclude all the air possible, and have given statements of the great excellence of the cattle feed thus prepared. When vegetable substances containing as considerable a proportion of water as recently cut grass does, are closely packed and left to themselves, they will ferment. The result of the fermentation is heat, throwing off water and carbonic acid, a softening of the material, and certain changes in its chemical constitution. These changes of character, if not carried too far, are in no way deleterious, but in fact render a portion of the woody fibre digestible, which before was not so.

An article called "Brown Hay" is made in Europe in several ways, all dependent on the same principle. When the grass is cut it is left a while to wilt, a day or two, according to the weather, then laid up in heaps of the size of ordinary hay cocks, which, after standing a day or two longer are lifted without stirring, and laid together in large heaps or stacks and well trodden down as they are laid up. The stacks are formed to shed the rain, and sometimes a little salt is sprinkled in as they are made. The wilted grass is often hauled to barns, or rather buildings for the purpose, and these are packed full, each forkful being thoroughly trodden. When the fermentation comes on in the buildings or the stacks, it will heat and steam powerfully, and there may even be some danger of spontaneous combustion, if dry matters are in close proximity. As the heat subsides, it is trodden again in order to keep all tight when the hay settles, as it does very much, the bulk being reduced fully one half. If the air gains access by cracks or otherwise, mildew will follow. Cattle of all kinds are very fond of this food. It is hard and compressed, like pressed hay—all in a mat—of a brown color, and a sweet, somewhat hay-like odor. In the stack or mow it may be cut with the hay knife or a hatchet, and it is easily broken up to feed out. This article, therefore, however produced, is nothing new, but has an established reputation, and is, no doubt, a very good way to make hay, especially when the grass is very full of weeds; for all these disappear in the softening process which the hay undergoes (unless they are coarse, or of an acrid, or very hard character).

It is said that well wilted grass may be baled up in the field, and thus cured without further care, except to pile the bales together and protect them from rain by a covering of hay or straw.

A man writing to the Boston Cultivator, says he packs wilted grass in air-tight casks or boxes and heading them up, keeps the hay any length of time. The editor of that paper goes into ecstasies over the perfume of the sample box sent to him.

On page 151, (May No.) we published an account of the manner in which a most excellent quality of clover hay was produced by housing wilted grass, putting it in layers between dry salt hay. All these methods we commend to the ingenious, as worthy subjects of experiment during the present haying season.

Halsted's Hay Fork Attachment.

A. M. Halsted, 67 Pearl-st., New-York City, communicates, for the benefit of farmers, an unpatented improvement to be used in connection with a horse hay fork, for carrying the hay to the farther side of a wide mow, or dropping it at an intermediate point. He describes and

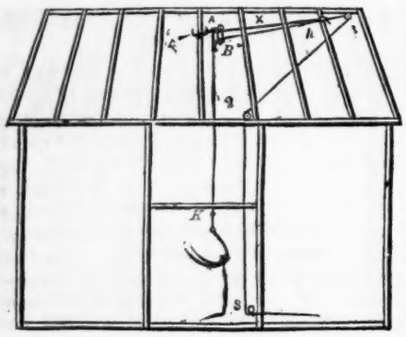


Fig. 1.—HAY FORK ATTACHMENT IN PLACE.

explains it thus, by a reference to the following illustrations and letters. Fig. 1 represents the attachment put up in a barn ready for operation, *x*, *x*, is an iron rod ¾ inch diameter, and of the necessary length for the barn in which it is to be placed. On one end is a loop (*g*, fig. 2,) and the other end is threaded and a nut with a *handle* put on so as to avoid using a wrench—*a* and *b*, are two pulleys hung together, the upper of which, *a*, runs on the iron rod, *x*; the hoisting or draft rope passes over the *lower* pulley (*b*); *f*, fig. 2, is one of two hooks of a bar hooked at each end, fastened to a cross-piece, securely bolted or spiked to the two rafters near the center of the barn; and about 2 to 2½ feet below the ridge pole. The loop end of the rod *x*, passes over one of the hooks, and the other end through a cross-piece (*h*), fastened on the further side of two rafters a little back of the center of the mow. This cross-piece should be placed as near the peak, or ridge pole as the traveler pully will allow. The rod *x*, should be screwed up *tight* by the hand nut. *C*, is a hook hinged or fastened to the axis of the pulley *a*, and dropping into the loop *g*. *D*, is a trip rod fastened to the hook and passing *over* it, and embracing the rod *x*, as shown in fig. 2, thus keeping the hook in proper position. This terminates in a loop, *e*, at the lower end, through which passes the draft rope. 1, fig. 1, is the first pulley fastened in the peak, or to the ridge pole or rafters, anywhere beyond the termination of the iron rod. 2, is the second pulley fastened to the plate over the door, and 3 the third pulley or "*snatch block*."

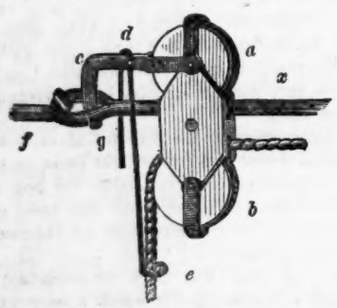
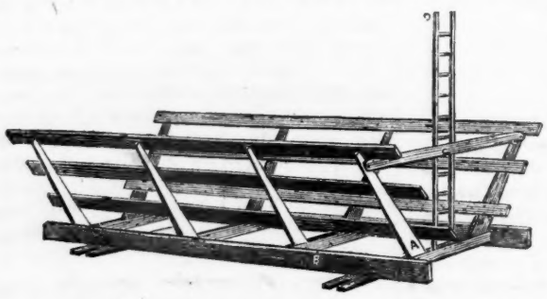


Fig. 2.—HALSTED'S HAY FORK ATTACHMENT.

When the fork is loaded it rises perpendicularly until the knob, *k*, (fig. 1,) meets and pushes up the trip rod, *d*, *e*, fig. 2, thus releasing the hook which keeps the traveler pulleys (*a*, *b*,) in place. The fork then is drawn along and up the rod, until relieved of the load. When the horse backs, the double pulley runs back *down* the rod by its gravity, and the hook (*c*) falls into the loop (*g*). The fork continues to descend to the load. A forkful of hay can thus be taken over any upper girt, not nearer than 6 or 7 feet to the ridge pole; and by using a long way rod *x*, can be carried to the third bay from the floor. This arrangement is being used in connection with the fork advertised in this paper by the same inventor, and will be furnished by him.

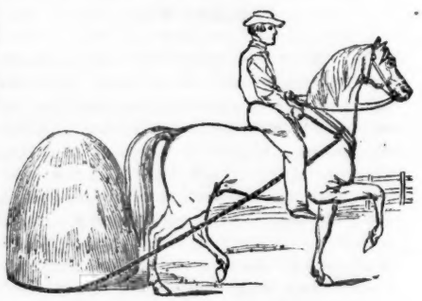
The Best Wagon Hay Rigging.

The accompanying illustration represents a convenient, light and strong hay rigging, which is considered by many good farmers superior to any now in use, and we have never met with its equal. It can be made of light or heavy timber. The following are the dimensions of the various parts of one made for our own use: The sills (B,) are of basswood, 16 feet long, 2½ inches thick and 8 inches deep. Pine, whitewood, or other light timber will make good ones. These sills are held two feet apart by four cross-sills of hard wood 2 inches thick and 6 wide, having a tenon on each end 1½ inches thick, and pinned firmly in the mortices. The object of placing the sills so near together is, to give the forward wheels more play when turning around. When the sills are placed against the stakes in the bolsters of the wagon, it is impossible to turn short around. Two saddle pieces, (E. E.) of hard wood, 2 inches thick and 3 wide, with gains in the ends to receive the wagon stakes, are bolted to the under side of the long sills (B). These rest on the bolsters of the wagon, and hold the rigging in place as well as if the sills were against the stakes. The arms, (A. A.) are made of hard wood, 4 inches wide



WAGON HAY RIGGING.

by 1½ thick at the lower end, where they go through the cross sills. The upper ends are 1½ inches square. In order to set these arms at the right inclination, place the sills on the wagon, and lay out the mortises through the cross-sills so slanting, that the arms will not rest on the hind wheels. This will bring the top of the rigging quite low. If it is desirable to have a wide rigging, let the arms be made long. Six or seven feet is sufficiently broad for a large one. The arms should fit the mortises in the cross-sills closely, but not so tightly that they cannot be removed without driving them out. Three or four slats, (H. H.) are secured to the arms (A. A.) with slim carriage bolts, which may be obtained at hardware stores, much cheaper than they can be made by hand. A tight bottom is made of inch boards; and when hauling grain, we had pieces of half-inch stuff fitted nicely between all the slats to catch the loose grain. A cross piece C, of hard tough wood, 3 inches wide by 1½ inch thick, is bolted to the end pair of arms at both ends of the rigging. The sides of the ladder, D, are made of small, light pieces and hard wood rounds, and the lower ends of the sides enter holes in the bottom of the rigging. It is usually most convenient to lay the ladder down, except when putting on a load. It is better to make the ladder wide at the bottom, and not more than a foot wide at the top. The most convenient way to remove such a rigging from the wagon is, to have two small pulleys at each end of the rigging attached to a beam in the barn, and raise it bodily from the wagon, and let it be suspended. In such a place it will always be out of the way, and under shelter. If painted and kept housed, such a rigging will last years.



MANNER OF DRAWING HAY WITH A ROPE.

Drawing Hay with a Rope.

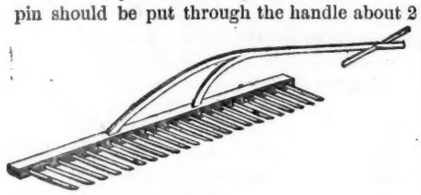
It is very desirable always to devise the best and most economical means to facilitate hard labor in making and securing hay, as well as in doing other kinds of work. For this purpose, many farmers make use of a rope and horse to haul hay cocks, either to the barn, or stack, where the distance is short. The illustration represents a horse in the act of drawing a cock of hay. One end of a ¾ inch rope, about twenty feet long, is fastened to the left trace, and placed around the bottom of the cock, then through a ring in the hames of the harness, and held by the rider. The end of the rope should be sewed through and through, with a strong leather string, in every direction, for two or three inches, to keep it from unraveling. A knot in the end of the rope is objectionable as it will hinder its being drawn out of the hay readily. In order to prevent the cock from being drawn over towards the horse, lift up the hay all around the bottom, and thrust the rope under it with one foot. It will then be moved off so cleanly, that it will seldom be necessary to rake the scattering spears, where the cock stood. By hitching two horses to the rope, one at each end, and starting at the end of a windrow, letting the horses travel close to the windrow, four or six hundred pounds of hay may be collected in a bunch, as fast as a horse can walk, and hauled, with the team on a trot, to the barn. When the horses first start, however, a man or boy should thrust a fork into the hay, and press downwards on it, until the rope is well loaded. As soon as the cock is drawn to the desired place, one rider lets go the end of the rope and the horse draws it out of the hay.

The principal advantages of drawing hay in this manner are: It save much hard labor of pitching it on a wagon; two small boys who

can not pitch hay will haul a ton to the barn or stack, 20 or 30 rods, quicker than two men will be able to do it with a wagon; cocks can be drawn from a lawn or orchard, where there is not room for a loaded wagon to move; and when a whole cock is taken up by a horse fork, and placed on a mow, or stack, it may be spread around with much less labor, than when a large wad is torn from a loaded wagon. When stacking hay, two boys and one horse will haul it to the stack faster than an active man can pitch it by hand, thus saving all the hard labor of pitching the hay on a wagon. When hay is stored in barns in or near the meadow, two hundred pounds may be put in each cock, after it is well cured, if they are hauled with a rope, as a horse will draw a large one as well as a small one.

The Buck Rake.

The illustration herewith given represents a very convenient and useful rake, for raking light hay or for gathering the scattering hay while a load is being put on the cart or wagon. The sketch was sent by Trevor Yates, Otsego Co., N. Y., who calls it a "shoulder rake," who says that an active boy or girl, 10 or 12 years old, will do more with it than a man with an ordinary hand rake. He thus describes it: The head of the rake is 6 feet long, made of good timber, 2 inches wide and an inch and a half thick. There are 23 teeth in it, about 3 inches apart from centre to centre. The teeth are 9 inches long, made flat, with a ⅜-inch tenon on one side, and sharpened on the under side. The tongue is crooked at the rake end and sawed apart about 2½ feet, then spread about twenty inches to operate as braces. A pin should be put through the handle about 2



BUCK RAKE.

feet from the rake, and the handle should be longer than represented by the engraving. When the rake lies flat on the floor, bore the holes in the head for the prongs of the handle so that the end of the handle will be about 3 feet 8 inches high when the rake is finished. The boy or girl can then take hold of the pin with one hand, place the other on the under side of the tongue and draw it over the meadow. When the rake fills up, push it back a little, so that the teeth will take a new hold under the hay more readily; it will thus carry a big load. This kind of rake may be used advantageously for raking hay into windrows where it is light, as well as raking up the scatterings after hay has been put in cock. The ordinary hand rakes are quite too small and short for raking up scattering hay. For this reason, every farmer should have at least one buck rake. A mechanic of common abilities can make one in a few hours. Such a rake will save much time and labor in haying.

Liquid Manure and Pump for Raising it.

Although a large per centage of liquid manure is water, it is yet very valuable for promoting the growth of all kinds of crops, and often more so than the solid portions. Of course its value diminishes in proportion as it is diluted with water. When animals are fed grain, the liquid which leaches from their droppings, or is collected beneath the stables, abounds in more fertilizing matter than that which flows from a pile of strawy manure. In the Old World the liquid manure of animals is saved with far more care than in America; and it has been stated by reliable authority, that in Belgium, liquid manure is valued so highly that the urine of a single cow commands over eight dollars per annum. Parties purchase it expressly for increasing the productiveness of their soils. If it is so valuable in other parts of the world, it certainly is worth saving in America. The great difficulty in collecting liquid manure is, a suitable pump. There is usually more or less sediment among it, which would clog an ordinary water pump. We give herewith an illustration of a portion of a very cheap liquid manure pump, which we have found to be very convenient and effective. Any one who can joint a board straight and square, will be able to make one with little or no difficulty. Four pieces of thick board are required, from 6 to 10 feet long. Two of them must be just 4 inches wide, and two others 6 inches wide. The latter two are nailed firmly on the edges of the others. This will make a penstock whose calibre is four inches square, from end to end. Now fit a block in the lower end, and bore a 2-inch hole through it, and fasten a valve over the hole to open upwards, and nail the block in place. The larger the hole the better, if the valve closes it well. The next thing is to make the piston, which is represented by the accompanying illustration, fig. 1. This should be of hard wood, 3¾ inches wide, and 1 thick at the lower end, fitting well but working easily. This will allow a piece of leather ⅛ of an inch thick to be nailed on each edge of the piston rod. Procure two pieces of leather, in the form shown in fig. 2, 8 inches long from *F*, to *e*, 6 inches broad at *F*, and 5 inches wide at *e*. These two pieces are shown nailed to the piston rod, fig. 1, *c*, *c*. At *A*, the rod is shown in two pieces, to indicate an indefinite length. *B*, is the handle to pump with. After the narrow ends of the leather have been nailed securely to the lower end of the rod, *A*, place the edges of the leather together, on the edge of the piston rod, and nail them firmly with lath nails. As the piston is thrust downward, the leather will fold together, as represented by the angular lines, *c*, *c*, and allow the liquid to rise above it. But as soon as the piston rod is lifted, the leather spreads out to the sides and corners, and raises all the liquid above it, and the liquid rushes through the valve in the lower end of the penstock, following the piston upwards. A spout can be made near the top to conduct the liquid where it is desired. Pieces of cobs, blocks of wood, or chaff will not obstruct the free working of this kind of pump. Such a pump will be found useful for pumping sediment from cesspools, or for emptying the vaults of privies, where most of the fecal matter is in a fluid and semi-fluid state. Paper will not obstruct the valve, or piston. Such a pump will draw water out of a shallow well very fast. The deeper the well, the more power will be required to work it.

Fig. 1.—PISTON.

Fig. 2.—LEATHER.

Improved Shackles for Bulls and Bucks.

The illustration herewith given, represents an improved pair of shackles fastened to the forward legs of a bull. Two strong leather straps, about 2½ inches wide, are buckled one around each leg, and held together by a piece of trace chain, from 12 to 16 inches long. In the middle of the chain is a swivel to keep it from being twisted into kinks, which will occur when there is no swivel, by the animal's throwing either foot over the chain. An iron link in the form of the letter D is welded to each end of the chain, through which the leather straps pass; and a piece of thin, firm leather is sewed over the iron to prevent chafing the legs. Instead of having one large buckle to each strap, it is better to attach two buckles to one strap, by sewing them on the outside of main strap, with separate pieces of leather. Then sew on firmly two straps to enter the buckles. By this means it will be seen, that the main strap is just long enough to permit the ends to meet, while the

buckles and straps are sewed on the outside. This prevents the buckles rubbing the legs. The length of the chain should of course be varied according to the size of the animal.

Such shackles for a buck should be made of much lighter leather and smaller chain, having a swivel in the middle that will work easily. Small chains for this purpose may be obtained at most hardware stores, much cheaper and better than can be made by ordinary blacksmiths. The swivel and a few links can be taken from a light trace chain. The chain for a buck's shackle should not be over 7 or 8 inches long. When the writer was accustomed to keep sheep, the bucks were never separated from the ewes. Such shackles were put on the fore-legs of buck's in the spring, or fore-part of summer, and removed the 1st of December, and an untimely lamb was never seen in the flock.

Sometimes a farmer has a young heifer or a cow which he does not desire to have with calf until some future period; and in some parts of the country the service of a bull at pasture is often stolen in the night, or when the proprietor may not be at hand. To prevent any thing of the kind it is only necessary to buckle on the shackles. When the bull is needed for service, any one who can handle him can take them off at pleasure. The leather should be kept well oiled to render it soft for the legs.

Clay Lands—Crushing Clods.

If a farmer could plow all his land at just the right time for it to crumble down most readily, there would be no use for clod crushers. When there are several acres plowed, and the weather continues dry from day to day, much of it will often become so dry that it will turn up in large clods, in spite of all that can be done. When this is the case, it becomes necessary to make use of the roller and harrow, alternately, until the hard lumps are reduced so fine that the rain will disintegrate them. If manure be hauled out in the spring, when the ground is wet, wherever the team poaches the wet soil—if it is a heavy loam, or calcareous clay—there will be more or less clods, as soon as the soil is plowed; and where the team passes several times in one place, there will often be so much lumpy earth, that it will hardly be practicable to get mellow dirt enough to cover a hill of corn. But the fault is not in the farmer, as his teams and vehicles must travel over the soil, whether it is wet or dry; and even when the soil is thoroughly underdrained, and in a high state of fertility, it will plow up in lumps. It is sometimes utterly impracticable to plow a large field at the best time. Therefore, since clods and lumps are unavoidable, we must adopt the most effectual and economical way to pulverize them. When hard and dry, they are very difficult to crush with any implement, but soon after a heavy shower of rain, when the soil has dried sufficiently to prevent adhering to the roller, or crusher, they may be reduced to powder very effectually. Let a harrow follow the roller to bring up the clods that are partially buried, and roll the second time. If the roller be applied at the correct time, clods will give but little trouble. Where there are lumps between rows of corn or potatoes, the best way to dispose of them is to turn out all hands, with axes, clubs or mauls, and crush them. A blow applied with the flat side of an ax, will do the business as effectually as anything. When weeds and grass are small, this practice will be found almost equal to a dressing with hand hoes. When a field is not underdrained, and is excessively wet, and heavy animals have been allowed to travel over it, we must expect hard lumps when it is plowed.

More about Orchard Grass.

Several inquiries, especially one from S. W. Penney, of Licking Co., Ohio, suggest a few additional remarks on the cultivation of orchard grass. Our correspondent writes that his farm is principally stocked with sheep, that he has been using clover, timothy and blue grass for meadows and pasture, with the addition of early sown rye for late and early feed; and adds: "From what I have read I am disposed to try orchard grass. Please advise me in the *Agriculturist* what other grasses to mix with it for pasture or meadow? How much seed per acre of each? The best time for sowing, whether it should be sown in autumn or spring? and whether it should be cut at same state of maturity as timothy?"

In addition to what is given on pages 114 and 115, we will state that orchard grass no doubt will succeed well wherever timothy will, either for pasture or early hay. If the soil were in a very fertile state, we would sow ten pounds of early red clover seed —which matures about the same time with orchard grass—fourteen pounds (1 bushel) orchard grass, and seven pounds (half a bushel) of Kentucky blue grass. The object of the blue grass is to form a better sod than the orchard grass and red clover will make. The blue grass will occupy all the bare spots between the tussocks of orchard grass and the bunches of clover; and will furnish late pasture, when red clover has nearly ceased to grow. But, as red clover and orchard grass grow larger than blue grass, it will not amount to much in making hay. Sow orchard grass and early red clover in the spring, in preference to the fall, as young clover is very liable to be injured by freezing and thawing in winter and spring. It is also better to sow orchard grass in the spring when sowed with red clover, as the two will mature at nearly the same time. If orchard grass and Kentucky blue grass be sowed in autumn, and red clover the following spring, the clover does not have an equal chance with them, and a large proportion of it will be choked and die. All of these kinds of grass should be cut for hay as soon as they have attained their growth and are in full blossom.

Making Clover Hay.

In making clover hay it should be the aim to cut it at that stage of the growth of the plant when it will make the most and best dry fodder; to cure it in such a way that it will retain its green color and nourishing properties in the highest degree, and to perform this labor with the greatest economy and dispatch. The main difficulty encountered is this: if it is not managed properly during the curing process, the hay will be harsh, very dry, and unpalatable; the heads and leaves will drop off before the crop can be cured; and if it is not cured enough it will "mow-burn," badly depreciate in value, and finally be less nutritious than good straw. When managed properly it may be cured so as to retain all the leaves and flowers, and if the weather is not too wet or lowery, even the color of the blossoms will not be entirely lost. We have often picked up heads of red clover, when feeding stock in the winter, which were cured properly, and smelled and tasted as sweet as when just made.

The time to cut red clover for hay, is when it has attained nearly or fully its greatest growth and is in full bloom. If a crop of seed is expected from the second growth, it should be cut a little sooner than this. (See an article in this volume, page 182, on growing clover seed.)

Clover should not be sunned too much. Three or four hours of uninterrupted sunshine, if it is spread out and stirred once or twice, are sufficient. Where it is thick on the ground, or in swaths, the upper side is frequently burned by scorching heat, which renders it harsh and brittle. A convenient amount should be cut as nearly at the same time as practicable, so that it may all be cured alike. When a meadow is mowed by going around it, sometimes a portion of the hay is exposed to the sun several hours longer than it ought to be, while another part of the same grass receives not half enough. This should be carefully guarded against.

If the mowing is done with scythes, commence on one side of the field, and either mow back and forth, or cut around as much as can be laid down in one or two hours. If the clover is cut with a mower, drive around about as much as a team will mow in the same length of time. The object is to have all the hay that is cut at a certain time in the day, lie by itself. As soon as it is cut, spread the swaths evenly over the entire ground. Then mow another acre or more, or let the clover be spread by another hand as fast as it is cut. The true way is to mow a field as it is plowed, when we commence on one side, working towards the other. The clover that was cut before noon, should be raked and put in cocks before night, if it be a good hay day. After it is cut, the more it can be shaken up and turned over, and "kept in the air," the better the hay will be in the winter. If the farmer owns a Hay Tedder, let it be kept in motion from one hour after the clover is cut, until fit to rake. When clover is allowed to remain in the swath for a few hours, or half a day, or as some practise, a day and a night, before it is turned over or spread, all that portion on the surface will be cured too much, while the middle, or under side will scarcely be wilted. Every stalk should have the benefit, if possible, of a few hours hot sun. The chief object is to evaporate a large part of the water contained in the juices. This may at first be done very rapidly, for while it is going on, the clover is as it were enveloped in an atmosphere of moisture, and cannot parch. As soon as rapid evaporation stops, and it begins to smell and to be hay-like, and not simply wilted clover, it is time to check the drying by putting the hay into windrows or cocks. Here the exercise of good judgment is essential, lest the new mown hay be dried too quickly, and too much, which injures its excellence quite as much as it does to bake bread or cake in too hot an oven.

WHEN THE CLOVER HAY IS FIT TO RAKE.—An experienced hay-maker can decide with great accuracy, even blindfolded, when hay has been sunned sufficiently to rake and put in cock. Before it is cured enough it feels heavy, and it is the water in it that renders it so. As soon as the great bulk of the water is evaporated, it feels not only light, but soft and wilted. At this period it should be raked with all possible dispatch, and cocked up. The semi-fluid substances now in the stalks and leaves, need simply to be cured by the drying atmosphere. The burning sun injures them, just as too much broiling makes something like sole-leather out of a good steak. If in cocks, or in the shade, what remains of the curing is gradual and complete. In cocking hay, the windrows should not be rolled up in compact masses, and pressed down closely, as it prevents the partial circulation of air essential to curing and drying. The cocks should be made narrow and high, by placing one forkful directly on the top of another. When of this form, the new hay cures and dries out much sooner than when the cocks are broad and low. Furthermore, when one forkful is placed above another, the ends of the haulms are on the outside and hanging downward, carry off rain. In wet weather cover the cocks with hay caps; but keep the caps off so long as there is no danger from rain. When the weather is pleasant, let the cocks be forked over every day after the dew is off, by pitching thin forkfuls from them, and laying the hay up into cocks again. An active man will re-cock three tons in one hour; and thus give it a good airing. Repeat this process for three days at least, when the hay may be housed or stacked. When getting it in, as soon as a load is put on the wagon, turn over cocks enough for another load, stirring up the damp hay near the bottom. By the time one load is pitched off, another load will be in prime order to go into the barn. It is not good practice to spread out eight or ten tons of hay at one time, unless there is help enough to secure it before it is injured by too much sunshine or rain.

neither is it well to let hay remain in the cock until it is very dry. As soon as it is well cured it should be stored. If one has an abundance of barn room, it is always better to put one load in a place, even if it should be necessary to move it after a few days. When there are certain indications of a heavy rain before hay can be thoroughly cured and housed, it is well sometimes to put it in before it is really fit to be stored in a permanent mow. Under such circumstances, pitch a load on some loose poles overhead, perhaps another in another place, and so on. Then, after a few days, it may be all forked over and shifted to another part of the barn. This labor requires no more time than to do it in the field, and thus a great amount of excellent hay may be saved from being damaged by the rain, and the labor performed when workmen have little to do.

Western Agriculture.

IS THE AMERICAN AGRICULTURIST ADAPTED TO THE WEST?

The following letter is written to the *Agriculturist* by a young go-a-head westerner, of Lasalle, Ill. It is so true an expression of genuine western feeling that we give it, making it a text for a few words on the same subject regarded from a somewhat different stand point:

Editor of the Agriculturist, Sir:

"Do not think that your paper will do for the whole American continent. Why, sir, as far as farming is concerned, it will not do at all for the West. Guess it will only do for the East, where it is printed alongside an old stone wall, amongst roots, stumps, sticks, stones, grubs, brush, and all kinds of rubbish generally found on eastern land. Why, sir, if you have never been out west, you can not believe the vast amount of work done here. Men here with one team cultivate 40 acres of land and live 4 miles away from it. Two men and teams can cultivate from 30 to 50 acres of small grain, and from 50 to 80 acres of corn and do it well. We have had men from the East here who declared that ten men could not do the work that one man had to do here. One man and team will plow 2 acres per day, and will mark one way from 30 to 40 acres (for corn.) One man and boy, with team and corn-planter, (Brown's is most generally used) will plant from 10 to 20 acres. We have corn-plows with which we plow from 8 to 12 acres, reapers which cut from 10 to 15 acres. We thresh and clean from 300 to 500 bushels of wheat from 500 to 800 of oats, and about the same of barley a day. Men husk from 30 to 50 bushels of corn, and we never think of cutting up corn stalks unless we have not got hay enough for our cattle in the spring, as they get feed enough in our cornfields through the winter, or until after the 1st of March, when we have to feed them until the 15th of April; then we turn them out into the prairies to go until the 1st of November. Then we take a day and hunt them up and drive them in rolling fat. Now, sir, do not you think this is a much more profitable way of raising cattle than the way you tell us to do on page 137, May number, current vol.? Do not think because we can do so much work here in a day, that we are idle half the time. It is nothing but constant work here from the middle of March to the 1st of December, or till Christmas. You have considerable to say about the best way to drop potatoes, pitch manure, make corn-markers, corn-coverers, etc., but we do not need any such advice here. These are *facts*—just what you asked for. I can't tell exactly where. Now Mr. Agriculturist, any information you desire about the West, I will cheerfully give it to you.

Yours truly, "WESTERN BOY."

It makes a man's notions of farming expand when he takes his stand on an eminence upon the prairies, where the waving maize fields alternate with those of wheat, and cultivated land, with the unbroken prairie on all sides as far as the eye can reach, realizing that the soil is deep and very fertile, that the climate is genial, and that the multitude of men that are making homes for themselves and their children, all over that broad region, are vigorous, young, ambitious and free. The earth only half tilled, yields most bountifully, and even without tillage the natural crop of wild grass affords abundant pasturage, and hay of passable quality for herds of small and great cattle. The eastern man who has had his little farm of 30 acres in Massachusetts or Vermont, and found enough to do for himself and boys, and perhaps one or two hired men the year round, may well look with wonder at cornfields of several hundred acres in extent, and express himself astonished at the rapidity with which farm work is done. He finds the soil as mellow as the finest garden mould he ever saw, and the subsoil of the same quality to the depth to which no plow can penetrate. He finds moreover the genuine Western Man as full of the West and its glories and advantages as if it were Eden itself, and as if no end of brag and exaggeration (which flows like a river) could convey a false impression.

The West is grand, and it is easy to raise big crops, and to go over many acres a day, and to make great crops without manure, without trouble from weeds, without the necessity for three or four times plowing and hoeing for what we call hoed crops. It is nevertheless true that good farming is dependent upon the same fundamental principles the world over. That what is true for the eastern farmer as regards the relations of the air, the soil, the plant, and the animal to each other, on his small, poor farm is just as true for the farmer on the broad acres of Illinois. If it is not necessary for him to save, and haul, and spread manure now, he should remember that without good husbandry his fields will finally become exhausted and need manuring. If weeds do not trouble him now, let him take the more care they do not find their way upon his land in foul grain seed, etc. If he has ten thousand acres of wild grass, upon which his herds, with those of his neighbors, may range and fatten, he can not tell in how few years his own quarter section will be all the land he can control, and farms and pasturage grounds of different farmers be as well defined as they are further East. If stall-fed beef, and dairies, and milk, and cream, and butter, and cheese, are almost unknown articles of diet, or of farm production, let him live in hope of the good time coming, when home markets, or ready transportation, will make it worth while to know something about their economical production. The prairies are not boundless, their fertility not inexhaustible, and manuring produces almost as desirable effects at the West as at the East.

We admit that we can not mark for corn, 40 acres a day, nor plant 20 acres, nor do a great many things as fast as they do "Out West." The *Agriculturist* is intended to be adapted to the wants of civilized men who till little or much ground, who have live stock to care for, be it beeves or chickens, households to provide for as regards both the wants of the body and the mind, and we doubt not even "Western Boy" finds some thing both of interest and value to himself. Should he write again we hope he will tell us what he knows from experience, and what his Western neighbors would be benefitted by knowing also.

A New Poultry Book.

There is now in press and soon to be issued by the Publisher of the *Agriculturist*, a new work on Domestic Poultry, by Mr. S. M. Saunders, of Staten Island. It will form, we think, a valuable hand-book for all who keep chickens, whether for economical purposes merely, or for fancy. The number of poultry breeders is fast increasing, who take more delight in the perfection of breeds, and the production of beautiful birds, than in either eggs or poultry, for their own tables or for market. This is indeed a beautiful and beneficial "fancy," and to be encouraged, unless it runs into unwarrantable extravagance, for it is through poultry fanciers alone that we can hope for the preservation in purity of those elegant and beautiful breeds of fowls which are and will ever be of so great use to all poultry raisers, enabling them to impart to common stock those qualities which render the pure breeds famous either as layers, or for the production of flesh. We give on the next page two of the beautiful engravings with which this work is very fully embellished. The first is of three somewhat famous breeds of French fowls, with descriptive extracts from Mr. Saunders' forthcoming book.

"Within the last two or three years some valuable importations of new breeds of poultry have been made into England from France; but I am not aware that they are known on this continent. They have, however, become sufficiently known and appreciated by our British cousins as to demand our attention.

"THE HOUDAN has short thick legs, and a round, well-proportioned body, large head, small top-knot, falling backward. It is bearded, and has five claws on each foot. It is a good-sized fowl, weighing, when fully grown—cock, 6 lbs.; hen, from 4½ to 5 lbs. The plumage should be speckled, white, black, and straw color. The comb is the most remarkable part of this bird; and I can not do better than quote Jacque's description: 'Comb, triple crossways of the beak, composed of two flattened spikes, of long and rectangular form, opening from right to left like two leaves of a book, thick, fleshy, and variegated at the edges. A third spike grows between these two, having somewhat the shape of an irregular strawberry, and the size of a long nut. Another, quite detached from the others and about the size of a pea, should show between the nostrils and above the beak.' This gives the bird a grotesque appearance, and there is an air of impudent drollery and humor about him that is peculiar to the breed. The legs are dark leaden gray. In this breed the hens approach more nearly the weight of the cock than is usual. These fowls are very popular in France, as layers and table-fowls.

"THE CREVECŒUR is better known than any of the French fowls; it is one of the best layers, not only on account of number, but also of size, being equal in this respect to the Spanish. It is a short-legged breed, square-bodied, deep chest, well shaped for the table.

"Like most of the French breeds, it is bearded and top-knotted, but the latter appendage is

like a crest, and allows room in front for the comb. This is singularly shaped, and I shall again quote Mr. Jacque: 'Comb various, but always forming two horns; sometimes parallel, straight and fleshy, sometimes joined at the base slightly notched, pointed, and separating at their extremities; sometimes adding to this latter description interior ramifications like the horns of a young deer. (The cock in the background is of this variety, and shows this appearance.) The same author says: 'The comb, shaped like horns, gives the Crevecœur the appearance of a devil.' The legs should be black, or very dark slate blue. Their plumage should be entirely black, having bright blue and green metallic lustre, except the feathers of the belly, which are dark brown. The hens should weigh from 5 lbs. to 6 lbs. each; the weight of the cock should be 7 to 7½ pounds. The deportment, of the Crevecœur is staid, solemn, and grave.

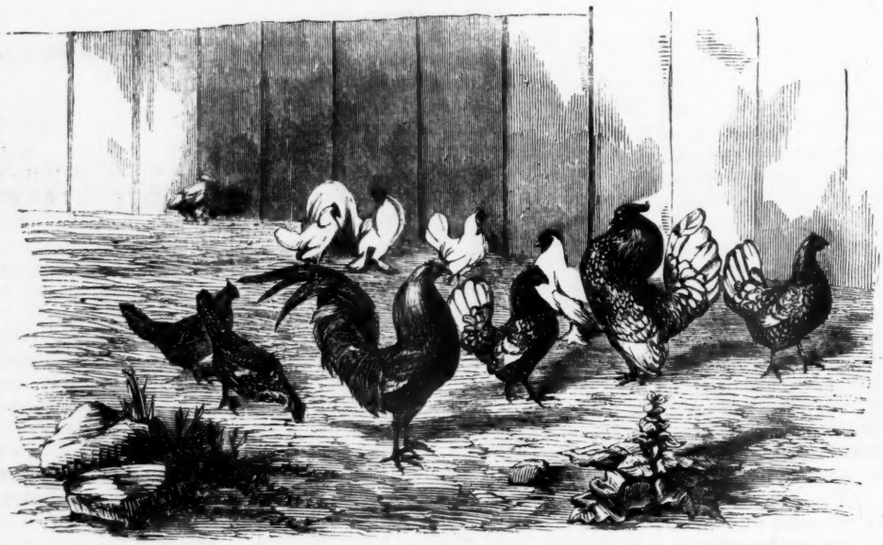
LA FLECHE. HOUDAN. CREVECŒUR.

GROUP OF FRENCH FOWLS.

"The LA FLECHE is a singular bird; with a strong, firm body, well seated on its legs, and long muscular feet. Appearing smaller than it really is, because the feathers are close; every muscular part well developed; black plumage. The La Fleche is the tallest of all French cocks; it has many points of resemblance to the Spanish, from which Jacque believes it to be descended, by crossing with the Crevecœur. It has white, loose, and transparent skin; short, juicy, and delicate flesh, which puts on fat easily. As layers they are superior, like the Crevecœur, to any breed except the Spanish; but yet, for table use, they are not as good as the Dorking. The La Fleche has the body of the Spanish placed on legs set forward, immediately under the breast rather than the body of the bird. It has a bold, cheerful, lively face; but the general impression is curious from the extraordinary comb, of which I will give the description from Mr. Jacque: 'Transversal, double, forming two horns bending forward, united at their base, divided at their summits; sometimes even and pointed, sometimes having ramifications on the inner sides. A little combling protrudes from the upper part of the nostrils; and, although hardly as large as a pea, this combling, which surmounts the sort of rising formed by the protrusion of the nostrils, contributes to the singular aspect of the head. This measured prominence of the comb seems to add to the characteristic depression of the beak, and gives the bird a likeness to a rhinoceros.' [A very singular bird, truly.]

"It should have a large deaf-ear, perfectly white; not so large as the Spanish, but larger than that of any other fowl. It has slate blue legs, darker or lighter according to age, turning to a spotted gray as they get old. The hens differ from the cock only by having a smaller comb. He must have a white ear-lobe. These are a peculiar but a stylish breed; they are very good layers, and the chickens are easy to rear."

Of the Bantams Mr. Saunders says: "They have long been favorites; their small size, their beauty, and their impudence gaining them admirers. Many years since, only those that were feathered to the toes were admired. The late John Sebright, by much attention and a thorough knowledge of the subject, succeeded in producing birds of surpassing beauty and symmetry. Those that bear his name are the most appreciated by fanciers. They are of two colors, gold and silver; they must have double combs, with pointed end and rising upwards, and well-seated on the head, firmly fixed, not inclining to one side, nor yet raised on a fleshy pedestal; laced feathers, each being edged with black; blue legs, without even the sign of a feather on them; upright tail, tipped with black at the point, which must be round and equal in width to the widest part of the feather; there should not be even a tendency to a curve in it. The side tail-feathers rising from the back to the tail should also be flat, round-topped, and accurately laced. There must not be any hackle or saddle. These are the principal points of the male. The hen requires the same comb, the same accurate lacing, the prominent breast, drooping wing; her head should be very small, beak sharp. The carriage of these birds should resemble that of a good Fantail pigeon; the head and tail should be carried up, in the strut of the bird, until they nearly meet, and the wing should drop down the side, instead of being carried up. In both sexes the wing-feathers should be tipped with black, and even the long feathers laced. Like all other first-class birds, these are difficult to get; and lest amateurs should be discouraged, I may almost venture to say, a faultless bird is hardly to be found. From the best-bred parents, single-combed chickens will constantly appear, but these will again produce perfectly double-combed progeny. Such are, however, to be trusted, when the possessor of them is sure that, although defective themselves, their parents were faultless in this particular. It is never advisable to breed from a faulty bird, if a perfect one can be obtained. Small size is a *desideratum* in these fowls. They are, therefore, seldom bred early, as growth is not desired. July is early enough to hatch them. Perfect cocks should not weigh more than seventeen ounces, nor hens more than fourteen. Other Bantams, to pretend to excellence, should be diminutive as the Sebright, and should have the same arrogant gait; but they differ, inasmuch as the males should be large cocks in miniature, with hackle, saddle, and tail fully developed. The rule of comb is not so imperative. In black and white birds it should be double; but it is not so necessary, nor does the substitution of a single one cause disqualification. In the black breeds, white deaf-ears are necessary to excellence; and in these and the white, the sickle feathers should be long and well carried. Feathered-legged bantams may be of any color. The Bantams are good layers and mothers, and easily reared."



GAME BANTAMS. WHITE FEATHER-LEGGED BANTAMS. SILVER SPANGLED SEABRIGHTS.

GROUP OF BANTAM FOWLS.

The Touch-me-not or Jewel Weed.

All through the summer months there may be found in rich, moist, and shady spots a wild flower, a small branch of which is represented in the accompanying engraving. The pale color and general coarseness of the foliage are such that the plant does not at first sight present a very attractive appearance, and its interest is mainly confined to the flowers and fruits. The plant grows from two to four feet or more in hight, and has a succulent semi-translucent stem; it is much branched and bears its flowers towards the ends of the branches. The flowers, the shape of which will be seen in the engraving, are curiously formed, the calyx and corolla colored alike, with one of the parts of the calyx much larger than the others, bag-like, and at one end drawn out into a point or spur which is bent over towards the front of the flower. The flowers are of a bright orange yellow, spotted with brown, and their brilliancy together with the grace with which they hang upon their slender stems, have naturally suggested the popular name of Jewel-weed. These showy flowers very seldom produce seeds, but other flowers, which are so inconspicuous that they are seldom noticed, are the fertile ones. In these seed bearing flowers, the petals, etc., do not open, but the pistil is fertilized in the bud; as it grows, the parts of the flower are pushed off. The long and narrow seed pod, when ripe, bursts spontaneously, and scatters the seeds, the five parts which form the exterior of the pod or seed vessel, breaking away from the central portion and curling up with considerable force. A pod after it has burst, is shown at the lower right hand side of the figure. The botanical name is *Impatiens fulva*. The generic name, *Impatiens*, alludes to the impatience of the seed-pod under handling, and its common name, Touch-me-not, expresses the same peculiarity. The specific name, *fulva*, is in reference to its color, and there is another species, less common than this, with larger and paler flowers, called *pallida*. The closely related garden Balsam, sometimes called Ladies-slipper, is *Impatiens Balsamina*, and in flowers (when single) and fruit resembles this in all important particulars.

Grape Mildew and its Cure.

Some of our correspondents, in view of the frequent recommendation to use sulphur to prevent or arrest mildew, ask how they can know that their vines are attacked by it. The mildew makes its appearance in little grayish patches upon the leaf, sometimes upon one side only and at others both sides are attacked. The spots rapidly increase in size, and the vitality of the leaf is destroyed; the young wood and buds are often attacked, and the green fruit is also subject to the mildew. If the progress of the trouble is not arrested, the growth is interfered with, and not only is the crop of the present season lost, but even if the buds escape injury, the health of the vine is so seriously impaired that it is afterwards more susceptible to the attacks of disease. When mildew appears on the fruit, it ceases to grow, the skin hardens, cracks and exposes the seeds. All of this trouble is caused by a small parasitic fungus, so minute that it requires a magnifier to see it distinctly. A small portion of the mildew is shown in Fig. 1, very much enlarged. At the lower side are seen a part of the threads which are, in the real plant, exceedingly minute and cobweb-like. These threads are the plant proper; they penetrate the tissues and living on their juices, branch and multiply rapidly, and cause destruction to the leaf and other parts of the vine. The upright, club-shaped bodies, shown in Figure 1, as springing from the horizontal threads, are the reproductive portions of the plant and contain the spores, or the minute dust, which serve to distribute and multiply the fungus in the same manner that seeds do in plants of a higher order.

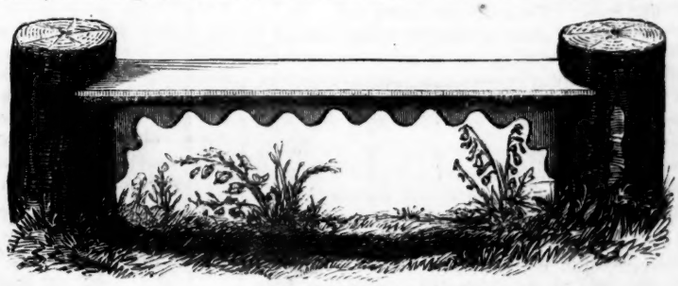
Fig. 1.—MILDEW.

The mildew fungus is called *Oidium Tuckeri*, the specific name having been giving in honor of a Mr. Tucker, who gave an account of the mildew when it first appeared in England.

Fig. 2.—SULPHUR BELLOWS.

Vines in a confined and moist atmosphere are more liable to mildew than those in a dry and open situation, and weak and poorly grown vines seem less able to resist it than do strong and vigorous ones. The susceptibility of varieties to attack, differs largely in degree, it being almost impossible to keep it from some, while others are never or rarely troubled by it.

Sulphur in some form has been found to be an effectual remedy; the direct application of the flowers of sulphur is the easiest, and perhaps as satisfactory in its results as any. With vines under glass, the volatilization which takes place at a moderate heat, suffices. Out of doors the plants must be dusted. We have before described a bellows used in France for the purpose of dusting the plants, and in Fig. 2 we give a representation of it. It is like a common bellows with a wide tin nozzle, which has its opening covered with coarse wire gauze. There is no valve on the under side, and on the upper side, for introducing the sulphur, is an opening, which is closed by a cork. The curve in the tube allows the under side of the leaves to be reached with ease. We believe that the bellows is for sale at the horticultural establishments.



Rural Embellishments.

The publication of a design for a rustic vase in January last, has called forth several suggestions in regard to such matters, which indicate that our readers appreciate the value of the ornamental as well as of the practical. We do not find much space in which to treat upon embellishments, yet they are not to be altogether omitted, and we hold that whatever makes home more attractive is really useful. In the matter of rustic vases, Isaac Hicks, of Long Island, finds that a cheese-box, properly strengthened, covered with chestnut-bark, and placed upon a portion of the trunk of a tree for a pedestal, makes a very serviceable and easily constructed vase. O. Ordway, of Hillsborough Co., N. H., makes his receptacle for flowers of the end of an old alcohol or other strong barrel. This is sawed off just above the second tier of hoops, the head strengthened by cleats and set upon a section of a log. The whole is then covered with a rustic work of twigs, bark or rattan, and if need be, painted brown or some neutral tint. Mr. O. thinks, that two kinds of plants are better than

a great variety, and prefers the Periwinkle (*Vinca minor*), or Money-wort (*Lysimachia nummularia*), for trailing over the edge of the vase and some of the dwarf Lobelias for the centre.—In the way of rustic seats, we have quite a novel and easily executed design communicated by C. E. Townsend, of Queens Co., N. Y., whose very clever sketch we have had engraved. Two log-cuts, with the bark on, 2 feet long, and about 20 inches in diameter, are used for the supports to the seat, which is a plank 14 inches wide and 6 feet long. Grooves are made in the logs at 8 inches from the top to receive the seat. Beneath the seat is a curtain sawed out of a 10-inch board, and which is held in place by longitudinal grooves in the logs, under the middle of the seat. The whole readily comes apart, and it may be taken in pieces, and housed in the winter. The plan here given is very simple and unpretending, and in many situations would be all that is required for a lawn seat.

The Culture of Celery.

BY PETER HENDERSON, JERSEY CITY, N. J.

I know of no vegetable on the cultivation of which there is so much useless labor expended with such unsatisfactory results, as celery. Almost all private cultivators still think it necessary to dig out trenches, from six to twelve inches deep, involving great labor and expense, and giving a very inferior crop to that planted on the level surface, in the manner practised on hundreds of acres by the market gardeners in the vicinity of New York.

Our manner of treating the celery crop, of late years, is very much simplified. Instead of sowing the seed in a hot bed or cold frame, as formerly, it is sown in the open ground as soon as it is fit to work in April, and kept carefully clear of weeds until the time of planting in June and July. The tops are shorn off once or twice before planting, so as to ensure "stocky" plants, which suffer less on being transplanted. Celery is always grown as a "second crop" by the market gardeners, that is, it follows after the spring crop of beets, onions, cabbage, cauliflower or peas, which are cleared off and marketed, at latest, by the middle of July; the ground is then thoroughly plowed and harrowed. No additional manure is used, as enough remains in the ground, from the heavy coat it has received in the spring, to carry through the crop of celery. After the ground has been nicely prepared, lines are struck out on the level surface, 3 feet apart, and the plants set 6 inches apart in the rows. If the weather is dry at the time of planting, great care should be taken that the roots are properly "firmed." Our custom is, to turn back on the row, and press by the side of each plant gently with the foot. This compacts the soil and partially excludes the air from the root until new rootlets are formed, which will usually be in 48 hours, after which all danger is over. This practice of pressing the soil closely around the roots is essential in planting of all kinds, and millions of plants are annually destroyed by its omission. After the planting of the celery is completed, nothing further is to be done for six or seven weeks, except running through between the rows with the cultivator or hoe, and freeing the plants of weeds until they get strong enough to crowd them down. This will bring us to about the middle of August, by which time we have usually that moist and cool atmosphere essential to the growth of celery. Then we begin the "earthing up," necessary for blanching or whitening that which is wanted for use during the months of September, October and November. The first operation is that of "handling," as we term it, that is, after the soil has been drawn up against the plant with the hoe, it is further drawn close around each plant by the hand, firm enough to keep the leaves in an upright position and prevent them from spreading, which will leave them as shown in fig. 1. This being done, more soil is drawn against the row (either by the plow or hoe, as circumstances require), so as to keep the plant in this upright position. The blanching process must however be finished by the spade, which is done by digging the soil from between the rows and banking it up clear to the top on each side of the row of celery, as in fig. 2. Three feet is ample distance between the dwarf varieties, but when "Seymour's Superb," "Giant," or other large sorts are used, the width of the rows must be at least four and a half or five feet, thereby entailing much more labor and loss of ground. For the past six years I have grown none but the dwarf varieties, and have saved in consequence at least one half in labor, and one third in ground, while the average price per root in market has been always equal and occasionally higher than for the tall growing sorts.

Fig. 1.—HANDLING.

The preparation of the soil and planting of celery for *winter use*, is the same in all respects, except that, what is intended for winter should never be "banked up" with the spade. It merely requires to be put through the handling process, to put it in a compact and upright position preparatory to being stowed away in winter quarters. This should not be done before the middle of September, or just long enough before the celery is dug up to keep it in the upright position. Our manner of preserving it during winter is now very simple, but as the knowledge of the process is yet quite local, being confined almost exclusively to the Jersey market gardeners, I will endeavor to put it plain enough, so that your readers "may go and do so likewise." In this locality we begin to dig up that which we intend for winter use, about the end of October, and continue the work (always on dry days) until the 20th or 25th of November, which is as late as we dare risk it out for fear of frost. Let it be understood that celery will stand quite a sharp frost, say 10 or even 15 degrees, while 20 or 25 degrees will destroy it. Hence experience has taught us that the sharp frosts that we usually have during the early part of November, rarely hurt it, though often causing it to droop flat on the ground, until thawed out by the sun. It must, however, never be touched when in the frozen state, or it is almost certain to decay. The ground in which it is placed for winter use should be as dry as possible, or if not dry, so arranged that no water will remain in the trench. The trench should be dug as narrow as possible, not more than 10 or 12 inches wide, and of the depth exactly of the height of the celery; that is, if the plant of the celery be two feet in length, the depth of the drain or trench should be two feet also. The celery is now placed in the trench as near perpendicular as possible, so as to fill it up entirely, its green tops being on a level with the top of the trench. Fig. 3 represents a section across a trench filled with celery in the manner just described. No earth whatever is put to the roots other than what may adhere to them after being dug up. It being closely packed together, there is moisture enough always at the bottom of the trench to keep the plant, at the cool season of year, from wilting. That which is put in trenches about the 25th of October, is usually ready to be taken up for use about the 1st of December, that a couple of weeks later, by 1st January, and the last (which we try always to defer to 15th or 20th November) may be used during the winter and until the 1st of April. For the first lot no covering is required, but that for use during the winter months must be gradually covered up from the middle of December, on until 1st of January, when it will require at least a foot of covering of some light, dry material—hay, straw, or leaves—the later perhaps the best. I have said the covering up should be gradual. This is very important, for if the full weight of covering is put on at once, it prevents the passing off of the heat generated by the closely packed mass of celery, and in consequence it to some extent "heats," and decay takes place. Covered up in this manner it can be got out with ease, during the coldest weather in winter, and with perfect safety.

Fig. 2.—EARTHING.

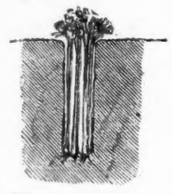


Fig. 3.—STORING.

It may be interesting to some to know what are the profits of this crop. I have cultivated an average of 10 acres of it for the past 16 years, and can speak from this experience. For many years in the early part of that time, it was by no means what we would now call a profitable crop. By persisting in raising the large growing sorts, and the awkward and expensive mode we had then of working it, we were satisfied if it gave us a profit of $50 or $75 per acre. But for the last six or eight years, by adopting the flat culture, and the drain or trench system for winter storage, it has done much better, and is now a very profitable "second crop," averaging a clear profit of $300 per acre, though it rarely brings over $3 per 100 roots. No doubt, in many parts of the country it would be much more profitable than in the crowded markets of New York. It is shipped from here in all directions; to Philadelphia (largely), Baltimore and Washington, (South,) and to Newport, Providence, Hartford and New Haven, (East.) It is a bulky and expensive article to ship, and the dealer must realize more than double on the purchase, or it will not pay his risk. It must thus cost the consumer, in these towns to which we send it, 8 or 10 cents a head, a price at which it would pay a clear profit of $1000 per acre.

DOUBLE-WORKING PEAR TREES.—In discussions about fruit it is frequently stated that a certain variety will only succeed on quince stock when "double worked." As this is quite a technical expression, some of our readers ask us to explain what it means. The readiness with which different kinds of pears will unite with the quince stock varies greatly, as does their after growth and vigor when the union has taken place. Double working consists simply in budding the quince stock with a kind of pear that is known to succeed well upon it, letting it grow to the desired size, and then budding

the pear with the variety which will not do well if worked directly upon the quince. In this way the early fruiting, and other benefits resulting from dwarfing are secured.

Notes on Strawberries.

As we go to press at too early a day to allow of any extended account of the fruit shown at our Strawberry Exhibition on June 8th and 15th, we give notes of our observations upon berries in the gardens and those which have from time to time been brought to the office. The present has generally been a favorable season for strawberries, and though the quantities in market have been large, good fruit has brought a good price. These notes are made upon berries in the immediate vicinity of New York, and the opinions given may not agree with the experience of those living in distant localities; but it must be borne in mind that those varieties which are successful in some parts of the West, and elsewhere, may be worthless here, and vice versa.

Agriculturist.—Specimens of this have been sent by several cultivators, and it bids fair to fulfil the hopes entertained of it as being one of the most remarkable berries in cultivation. The vines on Mr. Judd's grounds, though they were urged to make all the runners possible, are something wonderful in the way of fruitfulness, and seem to contradict the statement that a plant cannot make runners and still bear good crops of fruit. Some inquiries have been made as to the sexual character of this variety. Every blossom we have examined has been perfect; still, a close observer, whose accuracy we cannot doubt, states that some of the late blossoms are pistillate only, but that all become fertilized. This favorable opinion of the "Agriculturist" is not drawn solely from plants in Mr. Judd's grounds, but from seeing it elsewhere, and in different soils, and from the reports of those who have had it in cultivation long enough to fruit it. There was one point respecting this variety upon which we had strong doubts. It was known what the plant would do with high cultivation and with good but not excessive care, but we feared that like many other sorts it would, when subjected to the indifferent treatment of inexperienced cultivators, degenerate and prove a disappointment. This doubt is now removed, as we have seen it grow in very poor soil and almost covered with weeds, yet it produced an amount of fruit that in any other variety, under good cultivation, would be considered large. While we do not advocate poor culture for the strawberry, or for any thing else, it is gratifying to know that the "Agriculturist" is a variety that will do well under such treatment as it will be likely to get at the hands of the people generally, and that it does not need especial petting.

Lennig's White.—Altogether the best of the white berries, fine, large, and a great bearer.

Monstrous Hautbois.—This is a remarkably robust variety of Hautbois, and has all the peculiar characteristics of that class. It is a great bearer, and we are informed that the fruit is of good quality. We have only seen it with the unripe fruit, and regard it as a striking variety and promising well.

Ida.—Quite a new sort. Young plants are very vigorous, and make a good show of fruit.

Downer's Prolific.—This comparatively old sort is increasing in estimation with cultivators. It bears well, even under neglect, is very early, of good size and showy, but it is very acid.

Buffalo.—This has been by some considered identical with Russell's Prolific, but upon seeing the plants side by side, we cannot think them the same. Like the Russell, it is a strong plant and a great bearer, but it has much stronger fruit stalks and holds up its fruit better than that variety. Its resemblance to McAvoy's Superior, (we have not compared the two plants,) is still greater than to the Russell, and if not identical to that variety, it is, as far as the fruit is concerned, a distinction without a difference.

Triomphe de Gand.—This variety has done much better this year than last. Its large size and firmness make it an excellent market variety, but to our taste, and we are not alone in this respect, its peculiar flavor is not agreeable.

Burr's New Pine.—An old variety, but one which, in point of flavor, is hard to excel. Mr. Knox puts this as one of the best three, and considering his large experience, this is a high praise. It is usually considered a moderate bearer, but as we have seen it this year it had sufficient fruit to satisfy any one. Berry of only medium size, of good shape and color.

French's Seedling.—This variety, which has for some time been a popular one in the Philadelphia markets, proves well here. It is a very vigorous grower, and good bearer. Size and shape good, color bright scarlet, and of very fair flavor. These qualities together with its earliness make it a good market variety. Flowers hermaphrodite. Said to be an accidental seedling found in a meadow.

Fillmore.—This is one of Mr. Knox's favorites, but it does poorly on Long Island. It is pistillate, of good size, but there it is indifferent in quality and productiveness.

Marguerite.—Large and showy to the eye, but watery and worthless to the taste.

Austin.—Some very honest people think this a good fruit, and we are sorry not to be able to agree with them. It bears largely, but the fruit is soft and of very inferior quality.

Bonte de St. Julien.—A great bearer, and a good family fruit, sweet and too soft to market.

Le Baron.—Soft and flavorless.

Hooker.—This is said to be a rather local berry. In the extensive collection of Mr. Cavanagh, Brooklyn, it is a good bearer. Fruit of good size and among the best for quality.

Ladies' Pine.—A small to medium berry, very pale, fair bearer, and very sweet and rich.

Jucunda.—As we have seen it, large and poor, but has an excellent reputation at the West.

Jenny Lind.—Early and very firm, but not productive here.

Russel's Prolific.—This is well named "prolific." It maintains its reputation as one of the best and most productive of the pistillates. Sometimes hollow at the core and not very firm.

Belle Bordelaise.—This is a variety of the Hautbois with a most peculiar flavor, reminding one of a Black-cap Raspberry.

Fillbasket.—This was probably named by the rule of contraries. It would puzzle one to fill a small basket from a large bed as it grows here.

Progress.—A large and productive fruit, but lacking in flavor, and no progress toward perfection that can be discovered.

Cutter.—Good bearer, good size and flavor, rather acid, bright color, and has all the qualities desirable in a market fruit, except firmness.

Scarlet Magnate.—A very vigorous vine, but only fair bearer. Fruit soft and also quite acid.

Monitor.—Large size and prolific bearer, and a showy market fruit. Quality fair.

Green Prolific.—This is one of the parents of the Agriculturist, and like that is a strong grower and great bearer, but is rather soft and acid.

Crimson Favorite.—A very vigorous vine, but a poor bearer. The fruit is large and of excellent quality.

Gen. Grant.—This is a new seedling by Mr. Burgess of which we have only seen a few berries, and from these we should consider it a fruit of much promise.

Brooklyn Scarlet.—A very fair plant, good bearer, and handsome and excellent fruit.

Col. Ellsworth.—Large in size and indifferent in quality, but a very showy fruit.

Barnes' Seedling.—This is another new variety. It is a large berry, abundant bearer, but the fruit lacks character.

Heins' Seedling.—Another novelty, and a seedling of the Wilson, upon which it is an improvement, being large, of good shape, and spirited flavor.

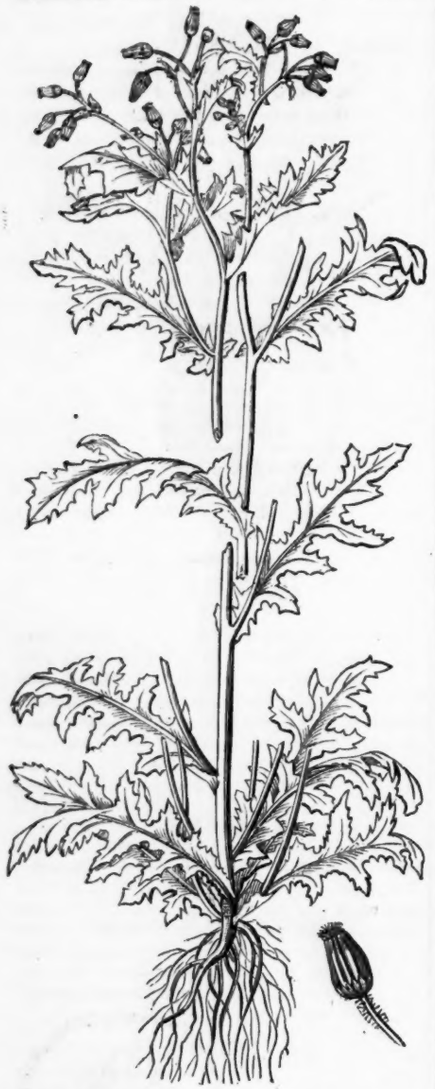
Useful Things in the Garden.

A number of garden implements have been illustrated in the *Agriculturist* this year, but the catalogue of them is not yet complete. In the choice of implements, whether for hand or horse power, it is a matter of importance to select those which will do the work thoroughly with the least expenditure of force, and if a few ounces can be saved in the weight, or the amount of resistance to be overcome, in a hand implement for the garden, it is a great gain. A correspondent, "J. M.," of Montgomery Co., Pa., sends us a drawing and description of an implement which he considers superior to any other for garden uses. It is not new, but is sold in our stores as a hoe-fork, or potato-hook; still, as it may be new to many readers, we give an illustration of it which will need but little explanation. The curved teeth are about 5 inches long, and filed to a sharp point. They are made with 4 and 5 teeth.

HOE FORK.

It is used by some of our best gardeners in place of the common hoe, to which they consider it as much superior as the spading fork is to the ordinary spade. By its use the soil is worked deeper than can be done with the common hoe, and it leaves the surface in that finely crumbled condition so favorable to growth. Our correspondent says: "in using it, merely drag it down the rows and if those who try it do not find it will do more work than any other description of weeder their experience will be different from mine."

One who has tried the "Adams Patent Weeding Hoe," described in the May *Agriculturist*, page 149, recommends it highly as a great labor-saving implement particularly on smooth ground. With it the ground between rows of onions, carrots, beets, etc., can be thoroughly cultivated close to the plants, more rapidly than four or five men could operate with common hoes. At this rate the weeder would pay its cost in a very short time.



The Common Groundsel.—*Senecio vulgaris.*

The plant of which an illustration is here given, is a native of Europe, but has kept pace with emigration, and is now known in every country settled by Europeans. In this country it is not very common in the newer States, but in the older ones it is quite abundant. Being an annual, it can not be regarded as a very troublesome weed, and none but a very careless cultivator will allow it to overrun the soil. In properly kept gardens the soil should not lie still long enough for weeds from seeds to get much of a foothold, and if any are visible they are only indications that the soil needs to be stirred. The engraving gives a sufficiently good idea of the plant without much description. At the lower right-hand side a head of flowers is shown of the natural size. It will be seen to be much like a head of flowers of the lettuce, except that while the small flowers in that are all flat, in this they are all tubular. They both belong to the same great family, the *Compositæ*, the fruit in which is so frequently furnished with a tuft of down which allows it to be carried from place to place by the wind. The seed of the Groundsel is dispersed through this agency, and in order to keep the ground clear of it, it should never be allowed to flower. The plant is also called Simson in England, where it is used in domestic practice and as a medicine for bots in horses. It probably has no great amount of activity. Birds are quite fond of it, and pieces of it are frequently put into the cages of singing birds. The generic name, *Senecio* is from Senex, an old man, the crown of the ripe heads presenting a tuft of white hairs; the specific name, *vulgaris*, means common.

Among the Rhododendrons.

Among the shrubs cultivated for ornament, there is none more satisfactory and truly elegant than the hardy Rhododendrons. A single plant upon the lawn produces a fine effect, and a clump of them of various colors in full bloom is something magnificent. Knowing that Parsons & Co., of Flushing, L. I., had the most extensive collections of these plants in the country, we visited their establishment in the height of their bloom. Probably no such floral show can be seen elsewhere, as this mass of thousands of Rhododendrons, with colors ranging from pure white to dark purple. Messrs. Parsons made a trial of all the new varieties produced in Europe, and have succeeded in selecting a series of perfectly hardy free blooming sorts adapted to our climate,—for it is frequently the case that those varieties which are fine in Europe, are quite unsuited to this country. Besides importing the best European seedlings, they have raised many themselves, and have some of their own production which excel any of the imported ones. Our native species *Catawbiense* and *maximum*, crossed with the foreign *Ponticum*, *Caucasicum* and *arboreum*, have given rise to a long list of varieties more or less hardy. The quality of the leaf is of as much importance as that of the flower, as it is only those, the foliage of which will endure extremes of our climate, that can be recommended for cultivation. Being broad-leaved evergreens, the winter's sun is very hard upon them, and they do all the better if covered during the winter with a screen of cedar boughs, or a thin straw thatch. The Rhododendrons need a light, rich soil, free from superfluous moisture. A light, sandy loam with plenty of leaf mould, suits them best. Unfortunately for their general introduction, the plants are of such difficult propagation and slow growth, that cultivators are obliged to sell them at a rather high price. The finer sorts bring $2 and upwards each, while the common *maximum* is sold at about half the price.

The Blight of the Pear Tree.

Every summer we are in the receipt of numerous letters enclosing blackened leaves of the pear tree, accompanied usually by the statement that a tree, apparently in full vigor, has been suddenly attacked, and a part or the whole of it killed. So sudden and so thorough is the work of destruction, that many are led to attribute it to some deleterious matter in the soil. This disease or blight is one of the most serious drawbacks to pear culture, and has received attention from several close observers. In some cases the trouble is caused by a borer, which comes from an egg laid near the bud, and penetrating the stem, soon causes the limb to perish. The injury seldom extends much below the point at which the insect enters, and the dead branch may be removed and burned. The most common form of blight is not produced by an insect, but is attributed to the effect of early frosts, in autumn, upon the unripened wood; hence it has received the name of "frozen sap blight." It has been found to occur most frequently when early frosts occur after a warm autumn. This being the alleged cause of the disease, it is obvious that the means of preventing it are to select such situations and give the tree such treatment as will induce it to ripen its wood so early that it cannot be affected by sudden atmospheric changes. A wet soil and over-manuring will, especially in a warm autumn, cause the tree to remain in a growing state much longer than if it were planted in a dry situation. A well drained, rich soil is most free from blight, though even here the very vigorous sorts may be attacked by it. Root pruning has been recommended to check luxuriant growth, and would doubtless be beneficial. When the attack is but slight, the tree will usually recover if the deceased limbs be removed, cutting them below the point to which the wood is discolored. Dr. Kirtland, whose suggestions are entitled to respectful consideration, regards the disease as one proper for medication, and has recommended the application of iron to the soil and to the leaves and branches of the tree. He proposes the use of blacksmiths' cinders about the roots, and sprinkling the tree with a solution of sulphate of iron (copperas). How far it is in our power to benefit trees by introducing into their circulation articles not demanded by their growth, is a matter upon which we have little or no positive knowledge, and is an interesting field for careful experiment.

A Sport of the Rose.

Some months ago we gave an engraving and description of the Green Rose, in which the petals are replaced by ordinary leaves; we now have an illustration of a more common, but equally striking departure from the ordinary way of things, in which one rose appears as growing out of another. It is not rare to find roses with a bud produced from the center, but we have never met with one in which the abnormal condition was so strongly marked as in that represented in the engraving, from a sketch by "W. L. G.," of Wallace, Ind. In flowers generally, the parts are crowded upon a *receptacle*, which is the end of the stem, and is rounded off or enlarged to accommodate them. The stem usually terminates within the flower and it does not often grow beyond it. In these sports of the rose the stem seems to be endowed with unusual vigor, and not contented to stop when it has borne a flower, it continues its growth and produces leaves and another flower. In the present case the growth was so vigorous that a second rose expanded above the first one

before its petals had fallen, and a strong shoot pushing from the center of the second one. Our correspondent mentions that green leaves were found mixed with the petals, and that some were found partly leaf and partly petal. A careful observer will find many examples of abnormal conditions of vegetable growth, and they are worthy of examination, as they frequently give one a clearer insight into the real structure of flowers and other parts of the plant, than we can derive from examining them in the perfect state, in which we usually see them.

THE HOUSEHOLD.

Vinegar Making.

Vinegar, so useful in the household, is prepared from various materials, but whatever is used, or however the process of manufacture, its production in all cases depends upon the conversion of alcohol into acetic acid, or the acid of vinegar. Though the liquid used may not at first contain alcohol, it must have those principles from which it may be produced and alcohol is formed in the process before the liquid becomes vinegar. This is the case where fruit juices or solutions of sugar of any kind are used for vinegar; the change is first to produce alcohol from the sugar, and then to convert the alcohol so formed into acetic acid. Without going into the chemical changes, this is in brief what takes place, and the essentials in vinegar making are: a liquid containing alcohol, or some material that will produce alcohol, a ferment of some kind, a sufficient temperature and a free admission of air.

As the conversion of alcohol into acetic acid is the result of oxidation, the presence of the oxygen of the air is quite important, and other things being equal, whatever tends to promote free contact of the air and the liquid, very much hastens the formation of vinegar. In apple, grape, and other fruit juices, we have a solution of the sugar of the fruits, which at the proper temperature readily undergoes fermentation; alcohol is produced from the sugar, and a weak mixture of alcohol and water, in the form of cider or wine, is the result. This liquid if left to itself for some months, will at length contain no alcohol, but be changed to vinegar. In the case of fruit juices no ferment is added as they contain a natural ferment, though vinegar is formed much sooner if some old vinegar, or mother of vinegar, be added. Vinegar prepared from fruit juices contains, besides acetic acid and water, various coloring matters, as well as peculiar flavoring principles; these, while they are not objectionable for table uses—indeed rather improve it—render it less fit for pickling, as the pickles have a less fine appearance and do not keep so well. Very pure and colorless vinegar is made directly from whiskey, or some other form of alcohol, and it is this which is found in the market as "white wine vinegar." In making vinegar from alcohol a vat is used of the form shown in the accompanying figure. It may be either a vat built for the purpose or a very tall cask. They are made from 6 to 12 feet high, and we have seen the vats made of two casks put together, with the junction made tight by caulking. About a foot from the bottom of the vat are 6 or 8 half inch holes, bored with a downward slant so that a liquid trickling down the sides of the cask will not run out, and an inch or two above the holes, a false bottom is placed in which are bored numerous ¾ inch holes. The cask is filled with beech-wood shavings to within about a foot or 16 inches of the top. Six or eight inches below the top of the vat is fixed a platform, or cross partition, in which holes are regularly placed, at 1½ inches apart. These are about 1-12th of an inch in diameter, and burned out so that they will remain free. This partition is put in place and the joint between it and the sides of the vat made tight by caulking. Pieces of twine are put into the holes in the partition in such a manner that the liquid, when poured upon it, will trickle through in drops. Four tubes of glass or of cane, ¾ of an inch in diameter, are set in holes in the partition; these do not project below, but above they reach to within an inch of the top of the vat, which is closed by a tight cover having an opening to admit the liquid. A thermometer is inserted in a hole in the vat, 6 inches below the partition, so arranged that the internal temperature may be inspected. A wooden faucet is placed near the bottom of the vat, and a glass tube, curved in the form of a gooseneck, is placed with its bend below the row of air holes. The shavings are boiled in good vinegar before they are packed in the vat, and after all is ready, the vat is brought into fermentation by the use of a mixture of one-fifth vinegar and four-fifths of a 3 per cent. mixture of alcohol and water. This liquid is heated to 75° or 80°, and poured into the vat and allowed to trickle through the shavings. The same liquid with the addition of more alcohol is warmed and passed through the next day, and so on until fermentation is well established, and the temperature within the vat has reached to about 100°, when it is ready to commence the process of manufacturing vinegar. The liquid used consists of 28½ gallons of water, 4 gallons of vinegar, and 10 quarts of 80 per cent. alcohol. This, in passing through the vat, becomes converted into vinegar, and the process may be made continuous. In practice, two vats are used, and the liquid, with only a portion of the alcohol, is passed through the first vat, after which the remainder of the alcohol is added to it, and the process completed by passing it through the second. The present high price of all alcoholic liquids will probably prevent many from experimenting in this direction, and this general outline of the process is given in answer to numerous requests for information respecting the manufacture of pickling vinegar. This account is made mostly from our own observation, while the measurements of the vat, etc., are taken from "The Manufacture of Vinegar," by Doct. C. M. Wetherill, a book which gives all the practical details of the process.

Coloring Cheese.

The *color* of cheese sometimes exerts a greater influence than the flavor, in securing a ready sale. Most people reject a pale, light-colored cheese; and choose those that have a golden color like rich cream, as this is a supposed characteristic of an excellent article. A light-colored cheese may possess all the richness of one that is as yellow as gold; indeed, they may both be alike in quality; and still the golden-colored one will be pronounced best, and command the highest price. So much does a good color enhance the value of cheese in most markets. In order to secure the desired color, it is customary to employ Annatto, but it may be done without. Let the curd remain in the vat, spread out as much as practicable, until it is of the right temperature to be put into the hoop. By allowing it to remain exposed to the atmosphere while it is cooling, instead of dashing cold whey, or water on it—as is sometimes done—the rich creamy color may be secured without the use of any coloring matter. By this means, all the good flavor and richness will be retained; whereas, when the curd is washed, more or less of the valuable portions of it are removed by the whey. If the curd be exposed to the air in this manner, the cheese will be of a uniform color throughout. Then if cured with care and the rind kept smooth by not allowing the outside to dry faster than the inside shrinks, a small quantity of annatto applied to the surface will impart a very good color to the exterior.

Fig. 1.—CITRON FLOWER AND FRUIT.

What is Citron?

By citron we do not mean that variety of watermelon which in itself is a hard green and tasteless thing, but which by the addition of sufficient sugar and flavoring, is sometimes made to serve as a sweetmeat, but that dark, fragrant, candied citron which is found in the stores, and which housekeepers use when they wish to achieve something unusual in the way of cakes. The citron of the shops is the candied rind of a fruit closely related to the orange and lemon—the *Citrus medica*. The tree, which is of medium size, is a native of Asia, and is now cultivated in the warm climates generally. The fruit is in general shape like the lemon, but very rough and knobby on the surface. It is quite large and is said to sometimes attain to the weight of twenty pounds. The rind is remarkably thick and out of all proportion to the size of the pulp. The shape of the fruit is shown in the above engraving, and a section, fig. 2, shows the relation which the rind and pulp bear to one another. The pulp is very acid, like that of the lemon, and the outer portion of the rind contains numerous little receptacles filled with an aromatic oil which communicates its flavor to the preserve, and is also extracted for use in perfumery. The rind is preserved in syrup, dried and packed in boxes for exportation. It is said that the rind is sometimes imported, pickled in salt and water, and candied after it reaches here. The Citron is mentioned by Pliny and other ancient writers, and it is supposed to be the fruit called apple in our translation of the Scriptures.

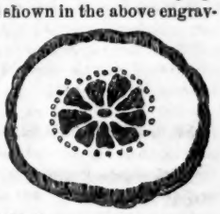


Fig. 2.—SECTION OF FRUIT.

Summer Drinks.

Many wish something other than water during the hot days of summer, and there are many drinks in use which serve to allay thirst more readily than the same amount of pure water. All of these popular beverages contain vegetable acids in a dilute state, and these, when taken in moderation, are both cooling and tonic. The very general use of lemonade, which may be taken as a type of these drinks, is due to something more than its agreeable taste, and is popular testimony to the refrigerant property of citric acid. The citric acid of the lemon, qualified by sugar, and flavored with the oil from the rind, more or less of which becomes mixed with the juice in the process of squeezing, forms lemonade. This may be imitated and the component parts put up in a dry form, as in Morris' Con-

centrated Lemonade, which we have before noticed as a most convenient substitute for fresh lemons. Those who live where lemons are not obtainable, or where they are too expensive, make use of substitutes. A kind of "switchel" is made in some localities, which serves as a very good summer drink, and is much used in the hay field. It is made of vinegar, molasses and water, and flavored with ginger—a homely substitute for lemonade, but very good and much better than many things that are drank. Some of the acid fruits may be made to furnish cooling and pleasant beverages, and we allude to the matter now to suggest providing a stock for another summer. Currants, dried as described in another article, will be found very convenient, as their acid is very refreshing, and a large supply may be put up with very little expenditure for sugar. Where the Barberry is common, a most excellent material for summer beverages may be stored up. The fruit simply preserved in sugar, makes a sort of conserve, which, infused in boiling water gives a palatable drink; but the best way is to make a syrup by boiling the fruit in water and convert the strained liquid into syrup by adding a pound and a half of sugar to the pint. If bottled and set in a cool place it will keep a long time. Added to water in palatable quantity, it is not only pleasant in health but very useful as a drink in fevers. Raspberry Vinegar or Raspberry Shrub is one of the pleasant and nice articles that can be made in the family. Raspberries are placed in a jar and covered with strong vinegar, and set in a cool place for 24 hours. The next day as many more berries are added as the vinegar will cover, and so for a third day. After the last berries have been in for a day, set the jar in a kettle of water, and bring it to a scald, and then strain out the juice through a flannel. Add one pound of white sugar to each 1½ pint of juice, and heat in a tin or porcelain vessel to the boiling point, skim, and bottle. Do not boil any longer than necessary to remove the scum. Thus prepared it will keep for years.

Soap and Soap-Making.

A "Housekeeper" writes to the *Agriculturist*: "As the season has arrived for making this necessary article of domestic use among farmers, I wish to offer a few suggestions and relate a little of my experience in that line. Like most new housekeepers I thought it did not require any great amount of skill or experimental knowledge to make soap—for, thought I—there is nothing more natural than for oil and alkali to unite. So every thing all ready, in the "New of the Moon" I commenced operations. But my lye and grease would not combine in spite of all my efforts. So I repaired to an old housekeeper to divine the cause. "O!" said she, "You did not make in the new of the moon." Yes I *did* though! I made the *same day* that many of my neighbors made, and they had "good luck." Then she assigned several other reasons as foolish as that. In my school-days I had picked up a little Chemistry. While reflecting upon it I concluded that *some other substance must be in the mixture* that prevented it from uniting. And here I would remark that if farmers' daughters, and young ladies generally, would study less Algebra and other (to them) comparatively useless branches, and turn their attention more to Chemistry, Nat. Philosophy, Botany, etc., they would find it of far more practical benefit. So while I pondered, it appeared to me that even if the moon had some influence upon animal and vegetable life, she certainly could not control oils and alkalies. Finally, another individual told me to "put water in it and the soap would come." I did so, but that made it very weak. After diligent inquiry and many absurd reasons "why the soap would not come," I at last ascertained that the woman who assisted in trying the lard, etc., at "killing time" had *salted* the *grease profusely!* So it was the salt that prevented the oil and alkali from uniting. Putting in water weakened the solution. The result was,—in common parlance—"the soap come." I would say to all housekeepers—old and young, keep salt out of your grease as much as possible if you would have no difficulty in making soap. The best way for keeping the grease for that purpose is to have a vessel of weak lye into which the grease can be dropped as fast as it accumulates. Their it is safe from mold, rats and worms."

Strawberry Time in New York.

A stranger visiting New York for the first time in the month of June, would think that a large part of the community were engaged in either selling, buying, or eating strawberries. The markets and stores are crowded with them; traveling venders hawk them through the streets; passengers in cars and on foot carry baskets of them; signs hang across the street announcing strawberry short-cake; all these as well as the exhibitions of the fruit at the office of the *Agriculturist*, and the rooms of the American Institute, indicate New York believes in strawberries. Early in spring, the windows of the restaurants show fruit raised under glass, which those who don't mind expense may taste—the general public can only look at it—but it satisfies them to know that strawberries are coming. In May, the southern counties of New Jersey send along their tribute of fruit, but very little of it gets into the mouth of the great public, and it is only when the warm suns of June are felt, that the fruit becomes abundant and cheap enough for everybody to have some. The best fruit, sent with care in neat boxes, never gets very cheap, and is only sold by the regular dealers, while the more common varieties in small baskets holding from a wine-glass-ful to a half pint, are sold by the venders who traverse the most remote streets. "Here they air, three cents a *bairskit*"—(with a long drawl on the "*a-i-r*," for the regular vender never says basket) is heard from morning till night. These venders are great institutions; a two-forty ($2.40) horse, a rickety wagon, a rough looking man with a strong voice, and one or two small boys with shrill, high voices, make up the establishment. If one goes to the market or grocers, and buys berries, he will soon after reaching home hear the venders, offering them for a cent or two less by the basket than he has just paid—but let him buy of the peddler and he will find that a *bairskit* is a very indefinite quantity. There are tricks even in the venders' trade, and if one has the curiosity to know how berries can be retailed at wholesale prices, he must go to Washington market early in the morning, when the dealers get their supplies, and he will see how two baskets as put up by the grower are turned into three in the hands of the vender, by either transferring to smaller baskets kept for the purpose, or by a judicious division and shaking up of the ordinary baskets. The fruit in good seasons is reasonably cheap, but we wish that it might be still cheaper, so that the poorer people could get a chance at this great luxury without being obliged to pay even as much as "Three cents a bairskit."

Preserving Currants.

Generally those who have currants at all, have so many that they cannot well be used in the fresh state, and many go to waste, consequently we have frequent inquiries how they can be dried and made like those sold in the stores. We have more than once stated in the "Basket" that the imported fruit was not a currant, but a very small kind of grape, and that there was no process by which the currant we cultivate could be converted into a similar preserve. There is a way, however, in which currants can be preserved without the use of so much sugar as is required in making jelly. Last summer we saw a quantity put up by a lady for the use of the soldiers, and it seemed to us the best thing that could be made from the fruit. It was prepared in this way: Seven pounds of currants were cooked with one pound of sugar until the berries were well broken up, the whole was then put upon a colander and drained, and the juice which was obtained in this way put again over the fire and evaporated to a thick syrup. The currants which remained upon the colander were then put into this syrup and cooked as dry as practicable without scorching. This was then spread upon plates and put in the sun to dry. Usually the upper surface dries in one day sufficient to allow the mass to be cut in small pieces and turned; the drying is continued until the pieces will not stick together. Prepared thus it will keep well if packed in a box in a dry place, and is most excellent for making a refreshing drink, as it has all the grateful acid of the fruit without the accompaniment of an excess of sugar. By soaking this dried fruit and cooking it with more sugar, an agreeable preserve may be made for the table. In making jelly the currants should not be over ripe, as taken when fairly red they give a better quality of jelly, and do not require so much boiling. It is much better to squeeze the juice from the currants before cooking, than it is to cook both sugar and currants together and then strain. In obtaining the juice, a clothes wringer, now found in every well regulated household, will save a great deal of labor. The berries are put rather loosely into a bag and the whole passed between the rollers of the wringer. The amount of sugar varies according to the character of the currants and individual taste, from 1 pound to 1 pound 3 oz. to the pint of juice. The juice is boiled or simmered and skimmed before adding the sugar, and then the evaporation continued until it will harden upon cooling. Upon this point no precise directions can be given, as juice from currants at the right stage of ripeness will form a jelly with scarcely any boiling, while that from riper berries will require to be boiled 15 minutes or longer. This is a point which experience only can determine.

A Home-made Hearth Rug.

A lady subscriber to the *American Agriculturist* writes: "Procure a coffee sack, tack it tightly on a frame of the size you wish your rug. Get a blacksmith to make you a crochet-needle about the size of a husking-peg, tapering rather more. With charcoal and rule 'lay out' on the sack the figure you wish for your rug. Gather all the old woolen rags such as are too much worn for carpet, 'Thrums, bits of wool, etc. Tear these in strips and with the hook in the right hand, hold the strip beneath in the left, thrust the hook through the meshes of the sack, catch the rag and pull it through about a half inch, then through again as near to the first as possible. By sorting the different colors and following the patterns, a very beautiful article can be made. After it is all filled up in this way, take a pair of sheep-shears or common scissors, large size, and shear it all off to an even surface. Old dresses are the best; heavy cloth will not work in well. I have seen such rugs in handsome parlors, and when tastefully made they are equal to any."

Cooking without a Fire.

In summer, it is a great comfort to be able to do most of the necessary cooking without a fire, we don't say without heat—for we haven't reached that point as yet—but without making a fire in the stove, generating many times more heat than is necessary, thus rendering the apartment uncomfortable, the cook overheated, and it may be cross. Some one has said that all human affections cease to exist above or below a certain degree of the thermometer, and it must indeed be more than an ordinary mortal who can cook over a large fire on a hot July day, and remain perfectly sweet tempered and lovely. Now as a saver of temper, and in many places of fuel, as well as a promoter of comfort, we remind our readers, of what we have before alluded to, that a good amount of the family cooking can be done by means of kerosene or gas. In those localities where gas is in use, a small gas stove will prepare breakfast and tea with the greatest ease and comfort. Some families use large gas stoves for all their summer cooking, but we have

not had sufficient experience in this to say whether cooking requiring a long application of heat can be done with economy. But most people are beyond the reach of gas pipes, and for them a kerosene stove answers an excellent purpose. We used, last summer, one made by Lesley & Elliott, who also make gas stoves, and found it very convenient, especially at tea time when there is seldom any need of heat beyond that necessary to boil a kettle of water. The apparatus consists of a small iron stove with a large kerosene lamp having three wicks, over which a teakettle, spider or saucepan can be placed, and the whole thing can stand on the kitchen table or dresser, and be put out of sight when not in use. The only especial care required in the use of kerosene is, to see that the wicks are not so high as to cause smoking, and with the gas, to so regulate the flame as not to burn more than is needed. Any person with ordinary tact will find either of these methods of cooking a comfort in hot weather, while others, who don't believe in new-fangled notions, and start with a prejudice against them because they are new, will probably manage to make them unsuccessful.

Hints on Cooking, etc.

Bread.—One pint mashed potatoes, one teaspoonful salt, and one of sugar. (The potatoes should be much wetter than for the table.) Add one teacupful of yeast, either home or baker's, but not a bit of flour. Keep this very warm till light. Use this to mix the bread, and mix so that it will just not stick. Let it rise very light, then mould into tins; keep very warm till light again, and bake in a moderately warm oven. I have made good bread in this way from flour not fit to eat without the potatoes.

Steamed Corn Bread.—Mix thoroughly 1 cup of sweet, and 2 of sour milk, 3 of corn meal, 2 of flour, 1 of syrup or molasses, and one teaspoonful of soda. Place it in a pan and steam it over boiling water steadily for three hours.

Butter Crackers.—"R.," of Rensselaer Co., N. Y., sends the following: Take 10 cups flour and 1 of butter, 1 teaspoonful of soda, and 2 of cream tartar, with water enough to form a very stiff dough; rub the butter and cream of tartar through the flour, and dissolve the soda in the water, roll thin and bake quickly. With these crackers and vegetable oysters we make oyster soup.

Lime Water for Correcting Acids in Dough, etc.—When bread becomes sour by standing too long before baking, instead of using soda I use lime water, two or three tablespoonfuls will entirely sweeten a batch of rising sufficient for four or five large loaves. I slack a small piece of lime, take the skim off of the top and bottle the clear water, and it is ready for use. A bottle full will last all summer.

Floating Island.—Beat the whites only of five eggs, until they form a stiff froth, then add a little at a time, 4 spoonfuls of powdered loaf sugar, and Currant Jelly, or syrup of any kind of preserves. Put rich milk or a custard with the yolks in the bottom of a glass or china bowl and put the float on the top.

Poor Man's Jumbles.—2 bowls of flour, 1 of sugar, ½ of sour cream or buttermilk, a little soda and cinnamon; to be rolled thin and fried in hot fat or butter.

Tea Crackers.—3 teacupfuls flour, 1 of lard, 1 of water, a large teaspoonful of salt. Mix all together, put it on the pie-board and work it well, adding flour until stiff, short, and perfectly smooth. Roll out as thin as a knife blade, prick with a fork, and bake well, but do not brown.

Omelet.—Take 4 eggs, 1 tablespoonful of flour, 1 cup of milk, and a little salt. Beat the whites of the eggs separately and add to the above, (which should be well stirred together,) just before cooking. Butter a spider well, and when hot pour in the omelet. Cook very slowly on top of the stove and keep the vessel covered.

Beet Hash.—Take cold boiled beets and potatoes, equal parts of each in summer and early autumn; in winter, one third beets, and two thirds potatoes; hash them, and fry or stew in milk and butter, with salt and pepper to suit the taste. Heat slowly and thoroughly; if scorched it is spoiled. This is a nice preparation for a breakfast dish.

BOYS & GIRLS' COLUMNS.

Making Garden Work Easy.

Gardening is hard labor or pleasant work, according as one manages to have it. It makes the back and arms ache to hoe through the long rows, and it is very tiresome to stoop among the beets, onions, carrots, etc., to pull the weeds. A boy may think of little but "Oh what long rows these are"—"what hard work this is"—"how I do ache all over"—"I wish dinner time would come," (does not that sound familiar, John?) Such thoughts will help very much to make one tired, and hot and thirsty, and thoroughly uncomfortable. One little gardener we know of, has a different way of looking at things. When planting corn, he was busy thinking of the fine roasting ears which would grow from them. "These are my little eggs," said he dropping some kernels, "I'll put them safely in the nest, and mother Earth will keep them warm, and first you know, all the sprouts will hatch out, and then grow and grow, and next September there'll be a whole brood of my corn on every stalk." And so he went on planting, thinking, and amusing himself with such pleasant conceits, forgetting all about the hard work. When hoeing time came, he called his hoe a musket; the weeds, rebels, and the corn, the Union men, and great sport he had in winning easy victories. That was certainly more agreeable than pitying his muscles and so making them ache harder. The secret of easy working is to *keep the mind pleasantly employed.* The garden is full of ideas for those who will take pains to seek them. On commencing work in spring, the ground is hard and must be plowed or spaded. That may remind you of the thick dullness of an uneducated mind. It takes something stirring to wake up its attention, and prepare the man to receive the seed of new ideas; the older he is, the harder work for him to learn. You remember the proverb, "You can't teach an old dog new tricks." When the seed begins to grow, if too thickly sown it must be thinned, or it will produce little. That may teach the very important lesson that one who would be successful must not have too many plans on hand. Most great men are those who have worked steadily on a few purposes. Then there are fortunate plants growing ahead of all around them, because they happen to grow in very rich earth; but their less prosperous neighbors do not seem to notice it; they go right on growing their best. Surely here is a good lesson. And so from every plant and weed, and from every operation in the garden, profitable and pleasant thinking enough may be drawn, to keep work from being irksome, and to greatly lessen fatigue. Try it the next time you are weeding onions, or hoeing cabbages.

Interesting Traditions of the Earliest Times.

A chief of the Ojibway Indians relates that when he became of suitable age to be made the head of his tribe, the "Medicine Man" or prophet of his people, took him alone into the woods to initiate him into some of the sacred mysteries. When they came to a certain location, the prophet bade him to remove his moccasins, because they were standing on holy ground. He then went to a large stump and drew from it a roll of bark on which certain characters were marked, which he read to the young chief. It professed to give among other things an account of the introduction of death into the world, in substance as follows: Thousands of moons ago, before death was known, this world was fastened to a bright star by a grape vine which grew in the midst of the home of the Indians. At the further end, where it touched the star, was a wicket gate. It had been decreed by the Great Spirit, that this gate must never be touched, that if any one presumed to knock there, death should enter the world. A little old squaw seemed determined to try the experiment, and several times she was detected climbing the grape vine, but was shaken off by the other Indians. But early one morning, to their dismay, they saw her so far up that they could not dislodge her. On she went, until she reached the fatal gate and knocked! Instantly the hand of an angel was stretched forth with a drawn sword, the grape vine was cut, and with the old squaw fell with a crash to the ground. The enraged Indians attacked her with fury, and stamped her in pieces, and so death commenced and has always continued on the earth. Our young readers will see how curiously this account resembles the fall of man as described in the Scriptures. A tradition apparently of Eastern origin thus accounts for the savage propensities of wild beasts. Before man sinned the animals all lived in peace. The lion, the tiger, and even the fierce hyena, were as harmless and gentle as the innocent lambs in whose midst they fed upon grass and herbage. But when Adam sinned they became sullen and wild, though they did not yet destroy each other. A number of them were present in the field when Cain killed his brother; then the smell and sight of blood maddened them, and a terrible strife followed. Hundreds of them were slain, until each learned which of the others was stronger, and shunned those they could not overpower, and they and their descendants have remained ferocious and blood thirsty.

A Child's Question.—A boy once asked Sir Humphrey Davy why two pieces of rattan rubbed together would give a faint light. The great chemist could not tell, but said he would try to find out, and after considerable experiment he made the discovery that this cane and a large number of plants contain silex or flinty earth, which helps to stiffen and protect their stalks.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the June number, page 191: No. 156. *Curious Sentence.*—He said *that*; that that *that*, that that that referred to, was incorrectly used....No. 157. *Illustrated Rebus.*—Tooth ink on s in with pleas ewer is necks two its c (omission); or, To think on sin with pleasure is next to its commission....No. 158. *Curious Latin Sentences.*—1, *Quis*, who; *crudus*, raw; *pro*, for; *lectum*, read; *album*, white; *et*, and; *spiravit*, blew; or, hurrah for the red white and blue: 2, *Mens*, mind; *tuus*, your; *ego*, I; *et*, and; *labor*, work; *via*, a way; that is, Mind your eye and work away: 3, *Bonæ*, good; *mali*, apples, *sunt*, are; *desiderabiles*, desirable....No. 159. *Illustrated Rebus.*—Two bee a man re quires sum th in g ye(e)ars (more than years); or, To be a man requires something more than years....No. 160. *Conundrums.*—1, Because it knows no law; 2, Scipio carried the war into Africa; Lincoln carried Africans into the war; 3, General satisfaction; 4, Portugal (is full of Portuguese).—The following have sent in correct answers up to June 8th: I. C. Martindale, 149, 150, 153; Rowland Robinson, Jr., 153, Belle Curtis and Mary F. Jordon, 153; "A. P.," 152; "J. Y. D." 147, 155; "T. S. McD.," 147 (There are several correct solutions to the planting problem); Jim R. Hale, 153; Emeline Burgert, 153.

New Puzzles to be Answered.

No. 161. *Curious Numbers.* From what number can you substract three and leave the same original number? 2d? 1 from 6 leaves 9, and 2 from 6 leaves 10; how can it be?

No. 162. *Illustrated Rebus.*—Appropriate to the times.

No. 163. *Conundrum.* Louis Napoleon and Maximilian are in dread of the gift of what whole country?

No. 164. *Word Rebus.*—Fuel sheep insect recolored in small spots journalist abbreviated, condensed moisture wash-pitcher opening tea made of dew.

No. 165. *Illustrated Rebus.*—To be remembered by all.

No. 166. *Conundrum*, by John R. Weeks. What river in the United States is like a private in the 54th Massachusetts Regiment?

No. 167. *Puzzling Sentences.*—1, Hi knees found harm under half covering. 2, Ut rye vattin I am iuu. Read them correctly.

No. 168. *Clock Problem.*—At a certain time between 8 and 9 the minute hand of a clock was between 9 and 10. Within an hour afterward the hour and the minute hands had changed places. What was the time first mentioned?

"THE BOYS ARE COMING HOME AGAIN."—*Designed and Engraved for the American Agriculturist.*

Such an Independence Day as will be celebrated this month was never known before. In the earlier history of the nation, there was perhaps equal joy among the smaller number who proudly and gratefully commemorated the triumph in the struggle which secured freedom and peace, but then only one point had been settled—the right of the people to self government. Wise statesmen looking to the unknown future felt that the young nation had yet to pass through its severest ordeal; that the time would come when the ability as well as the right of republican government was to be tested. They saw evils already growing, filled with danger to the young republic. How could strong party spirit be restrained from revolution? How could sectional jealousies be prevented? These and other questions might well occasion anxiety, for they have recently shaken the very foundations of the nation. But *now* we rejoice in a *tried* nationality, in a FREE land. Sectional hate, party strife and slavery have done their worst, and THE REPUBLIC LIVES! First of all we reverently give thanks to God who has granted victory over the terrible rebellion; next we remember with gratitude and just pride the heroes by whose strong arms, stouter hearts and matchless perseverance, treason is crushed and peace restored. They have well earned the welcome that greets them on their return to the homes they have given so much to defend. The scene which our artist has sketched has already been enacted in many a village, and is yet to gladden hundreds of districts. While all unite in public demonstrations of honor to our noble brothers returning from the field, let them also be remembered as deserving the best gifts of the nation whose life they have saved. Give them all offices of trust and honor for which they may be competent; let children learn their deeds, and ever show them respect; and where the hard fortunes of war have borne hard on them or their families, let the ample provision made for their wants show that we are not unworthy of the blessings secured by their hardships.

Finally, let all our young readers keep in mind that rebellion sprang from the ambition and selfishness of its leaders and the ignorance of its followers, that it was overthrown by heroism derived from virtue and knowledge, which are the surest safeguards of a free people.

Friends Among the Birds.

In response to the invitation in the April *Agriculturist* for our young readers to relate their success in making friends among the birds, James Dilts, Muskingum Co., O., sends an account of a pair of wrens that were made familiar by kind treatment. They came to the house in the fall of 1862, and made their home in some bunches of cotton that hung in the garret, where they were fed and cared for all winter. In the spring they suddenly disappeared, but in a few weeks returned to the neighborhood with a brood of young. These were soon fledged, and set up living on their own account, and the old birds built a nest in the corner of a shop where workmen were thumping and pounding continually, and there raised another family. When these were out of the way, they moved to a box in the garret where they had formerly lived. The following spring they made their first nest in the old location in the shop, but during the summer changed their quarters. They entered the window, passed across the garret, went down a stairway into a store-room, and found a long-necked gourd hanging there, which they at once appropriated, and held through the summer. Presently they were missed again, but late in the fall, they returned and passed the winter among the cotton in the garret. Toward spring one of them died; the other one remained, and when warm weather returned, brought in a new mate to share the gourd occupied the previous summer, where they are now enjoying life. The new comer is quite shy, but the older acquaintance is so tame that it has sometimes come into the window and perched on the dress of one of the girls in the family. No little bird stoned or shot by a thoughtless boy ever gave half the pleasure derived from petting and taming these friendly wrens.

Another young reader, Townsend Forbes of Queens Co., N. Y., recently described a successful method of attracting the birds to the grounds near his residence. He has a box or tank for containing gold fish, about three feet long, nearly filled with water. In one end of the tank is a sloping shelf passing down to where the water is about two inches deep, where it meets another shelf a few inches wide placed horizontally. The tank is placed in the yard and the birds of the neighborhood, robins, thrushes, yellow birds, sparrows, etc., find this a convenient place for bathing, and large numbers of them come every day to enjoy the accommodation kindly provided for them. Their actions while bathing are very diverting, and they repay the favor done them with grateful music. The boys who take a hint from this will see that any shallow dish in which water is kept will answer the purpose. It is well to have a sloping entrance to the water as birds are shy and like to enter gradually.

A Calculating Hen.

The Canton Mo. Press, is responsible for the following, which is certainly different from any hen performances in these parts. Our hens are ambitious to sit as extensively as possible. "A few days ago, a hen was found on a neighboring farm, incubating upon a nest of five eggs. Considering that too small an undertaking for a full grown hen, the owner removed these and placed thirteen fresh eggs in the nest. On examination soon after, it was discovered that the old biddy had deliberately rolled out eight, thus refusing to cover more than the original number. Four times the experiment was repeated with a similar result, and the obstinate hen was finally left to her select number, thus furnishing evidence not only of her reasoning powers, but of true feminine spunk."

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THE FUNERAL ODE, by William Cullen Bryant,
The EMANCIPATION PROCLAMATION, Jan. 1, 1863,
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Commercial Notes—Prices Current.

NEW-YORK, June 17.

The condensed and convenient tables below, show the transactions in the N. Y. Produce markets during a month past. They are carefully prepared specially for the *American Agriculturist*, from official and other reliable sources, including the daily notes of our own reporter.

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days *this* m'th,	359,000	398,000	1,477,000	2,100	131,000	1,723,000
24 days *last* m'th,	339,000	22,700	153,000	2,600	67,000	197,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	
25 days *this* month,	259,000	476,000	819,000	56,000	78,000	
24 days *last* month,	249,000	655,000	272,000	8,300	61,000	

2. *Comparison with same period at this time last year.*

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days 1865.....	359,000	398,000	1,477,000	2,100	131,000	1,723,000
28 days 1864.....	357,000	3,130,000	689,000	20,200	264,000	1,779,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	
25 days 1865.....	257,000	476,000	819,000	56,000	7,800	
28 days 1864.....	515,000	4,156,000	668,000	18,400	45,000	

3. *Exports from New-York, January 1 to June 15:*

	Flour, bbls.	Wheat, bus.	Corn, bus.	Rye, bus.	Oats, bus.
1865	594,249	369,944	314,241	141	45,017
1864	92?,?85	5,618,979	133,992	405	19,748
1863	1,068,989	5,759,353	4,379,779	280,287	103,588
1862	1,261,118	5,912,421	5,946,825	799,166	20,887

4. *Receipts at head of tide water at Albany, each season to end of May:*

	Flour, bbl.	Wheat, bush.	Corn, bush.	Rye, bush.	Barley, bush.	Oats, bush.
1865	64,900	403,800	560,500	20,800	99,800	1,741,000
1864	51,100	2,454,100	369,100	32,400	99,100	1,180,900
1863	130,700	2,625,600	3,224,300	42,800	46,600	1,327,000

CURRENT WHOLESALE PRICES.

	May 18.	June 20.
FLOUR—Super to Extra State ₱ bbl.	$5 90 @ 6 80	$5 75 @ 6 95
Super to Extra Southern	7 15 @12 00	7 25 @12 00
Extra Western	6 40 @11 50	6 50 @11 50
Extra Genesee	6 80 @ 9 00	6 95 @ 9 25
Superfine Western	5 90 @ 6 20	5 75 @ 6 15
RYE FLOUR	5 00 @ 6 00	5 25 @ 5 75
CORN MEAL	5 10 @ 6 00	4 65 @ 5 25
WHEAT—All kinds of White	1 75 @ 2 20	1 80 @ 2 20
All kinds of Red	1 25 @ 1 75	1 37½@ 1 80
CORN—Yellow	90 @ 1 08	90 @ 93
Mixed	90 @ 1 00	80 @ 93
OATS—Western	50 @ 52	78 @ 80
State	50 @ 51	73 @ 75
RYE	85 @ 90	85 @ 1 00
BARLEY	1 15 @ 1 45	1 00 @ 1 40
COTTON—Middlings, ₱ ℔	48 @ 50	41 @ 42
HOPS—Crop of 1864, ₱ ℔	10 @ 35	12½@ 40
FEATHERS—Live Geese, ₱ ℔	59 @ 63	63 @ 65
SEED—Clover, ₱ ℔	22 @ 23	13¼@ 14¼
Timothy, ₱ bushel	4 50 @ 5 50	3 00 @ 4 25
Flax, ₱ bushel	2 10 @ 2 25	1 80 @ 2 10
SUGAR—Brown, ₱ ℔	9¼@ 15¼	9¼ @ 15¼
MOLASSES, New-Orleans, ₱ gl.	75 @ 1 05	Nominal.
COFFEE—Rio, ₱ ℔	19¼@ 23	18¼@ 23
TOBACCO, Kentucky, &c., ₱ ℔	6 @ 20	6 @ 23
Seed Leaf, ₱ ℔	7 @ 30	7 @ 30
WOOL—Domestic Fleece, ₱ ℔	65 @ 80	57 @ 75
Domestic, pulled, ₱ ℔	62½@ 77½	58 @ 70
California, unwashed	15 @ 45	18 @ 42½
TALLOW, ₱ ℔	10 @ 10½	10½@ 11¼
OIL CAKE—₱ ton	48 00 @50 00	45 00 @50 00
PORK—Mess, ₱ barrel	21 50 @23 50	24 50 @28 25
Prime, ₱ barrel	21 50 @— —	18 00 @18 50
BEEF—Plain mess	10 00 @14 00	10 00 @14 00
LARD, in barrels, ₱ ℔	15¾@ 18	15½@ 19¼
BUTTER—Western, ₱ ℔	21 @ 35	26 @ 33
State, ₱ ℔	12 @ 20	7 @ 16
CHEESE	12 @ 20	7 @ 16
BEANS—₱ bushel	1 25 @ 2 25	30 @ 1 50
PEAS—Canada, ₱ bushel	1 90 @ 2 10	1 40 @ 1 50
EGGS—Fresh, ₱ dozen	24 @ 27	26 @ 29
POULTRY—Fowls, ₱ ℔	20 @ 24	18 @ 20
Turkeys, ₱ ℔	20 @ 27	18 @ 20
POTATOES—Mercers, ₱ bbl	2 50 @ 3 50	2 00 @ 3 00
Peach Blows, ₱ barrel	2 00 @ 2 25	1 75 @ 2 25
APPLES—₱ barrel	7 00 @10 00	8 00 @11 00

Gold, which closed last month (May 16) at 131, advanced by the end of May to 137¼, and by Thursday evening, June 15, to 147½. Influenced by this rise, which has been caused by the recent heavy exports of specie, the large purchases of coin to pay duties at the Custom House, and consequent speculative operations in the precious metal—the markets for domestic produce have been more active, and, though prices were irregular early in the month, the tendency through the past week was decidedly upward .. Flour, wheat, corn, and oats have been in good request for home use, and for shipment, closing buoyantly at advancing prices. The receipts were liberal in the first half of the month, but have fallen off considerably during the past ten or twelve days.... Provisions have been more freely purchased. New Mess Pork and prime Lard have been in active speculative request, at unusually variable prices. Beef has been steady. Butter has been less freely offered, and quoted higher, with a good export inquiry. Large stocks of butter are known as being on hand in the interior, held back for advanced prices, which, if gold declines—a very probable event—can never be realized. Cheese has been plenty and depressed, in the absence of an export demand ...Cotton has been more abundant, and has fallen materially. The demand has been quite moderate.... Wool has been in very limited request at lower and declining prices, in the face of a very moderate supply of the finer grades of both domestic and foreign, which are now most sought after....Hay and Hops have been salable and buoyant .. Seeds have been quite dull, though prices have receded rapidly ...Tobacco has been in pretty fair demand at steady rates.

New-York Live Stock Markets.—

BEEF CATTLE have come in more freely this month than last, and prices have declined on all grades of animals. There has been considerable effort, among some of the drovers, to keep prices up, but without success, and as vegetables and some kinds of fruits are now plentiful, anything like a decided advance is not to be expected. The beef cattle coming in are almost entirely from the West, and generally of good, fair quality. The average for the four weeks ending June 13th, is 4,967 head. The latest prices are about as follows: Good to prime bullocks, 16c @17c. per lb., estimated dressed weight; common to fair, 14c@15c., and poor 12c@13c. The quotations are very nearly the same as reported for the corresponding period last year.

Milch Cows.—Receipts have averaged weekly 121. The demand is little better, and prices range from $40 to $70 each for poor to good milkers.

Veal Calves.—The receipts of veals for the past four weeks have been very heavy, averaging 3,656. Prices range at 5c@9c. and 10c. per lb., live weight for poor to very good.

Sheep.—There has been a considerable panic in the sheep trade, and a decided decline in prices, since our last report, owing to the large weekly arrivals. The sales range at prices about 3c. per lb. live weight, lower, or 6½c@7½c per lb. live weight for common to good grades. The receipts have averaged 13,056 weekly.

Live Hogs are coming in very freely, especially for this season of the year, averaging 13,775 weekly. Prices range from 9¼c. to 10¼c. per lb. live weight.

Advertisements.

Advertisements, to be sure of insertion, must be received BEFORE the 10th of the preceding month.

N. B.—*No Advertisement of Patent Medicines or secret remedies desired. Parties unknown to the Editors personally or by reputation, are requested to furnish good references. We desire to be sure that advertisers will do what they promise to do. By living up to these requirements, we aim to make the advertising pages valuable not only to the readers, but to the advertisers themselves.*

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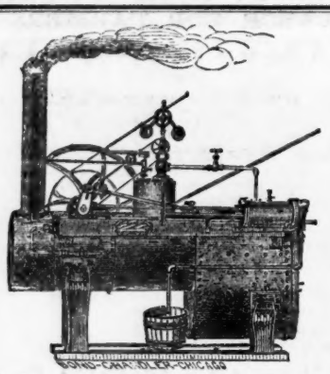

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Pre-eminently the first in the list of grain-exporting States, Illinois is also the great cattle State of the Union. Its fertile prairies are well adapted by nature to the raising of cattle, sheep, horses and mules; and in the important interest of pork packing, it is far in advance of every other State. The seeding of these prairie lands to tame grasses for pasturage or hay, offers to farmers with capital the most profitable results. The hay crop of Illinois in 1864 is estimated at 2,166,725 tons, which is more than half a million tons larger than the crop of any other State, excepting only New York.

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The price of lands varies from $9 to $15 and upwards per acre, and they are sold on short credit, or for cash. A deduction of *ten per cent.* from the short credit price is made to those who buy for cash.

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Forty acres at $10 per acre, on credit; the principal one-quarter cash down—balance one, two and three years, at six per cent. interest, in advance, each year.

	Interest.	Principal.		Interest.	Principal.
Cash Payment,	$18 00	$100 00	Payment in two years,	$6 00	100 00
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The above is a neat and useful invention for protecting orchards and shade trees from the ravages of the caterpillar, canker and other worms that now infest our trees to such an alarming extent. It consists of an iron trough made to encircle the trunk, containing coal oil or any gummy substance; this is protected from the weather by an iron roof cover. The whole made in sections and so constructed as to allow for the growth or expansion of the trunk without checking the flow of sap. When applied to the tree, it prevents the passage up of the female moth or miller (which, it will be noticed, does not fly), it at the same time catches and destroys them with all other insects that crawl upon the bark, thereby shielding the fruit and foliage from this terrible nuisance. It is so neat, simple and effectual, and sold at so moderate a price as to commend it to the attention of all owning trees of any value. The undersigned have secured from the Patentee the exclusive right to manufacture and sell this valuable invention throughout the United States. All orders should state the girth or diameter of the trees, in inches, for which they are wanted. To head off the canker, span or measure worm they should be applied to the tree in October. Orders addressed to our manufactory, New Britain, Conn., or to our Warehouse, No. 58 Beekman-st., New York, will be filled in their turn. A liberal discount made to dealers. P. & F. CORBIN, New Britain, Conn.

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Plants, Currant and Gooseberry Bushes,

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STRAWBERRY EXHIBITION

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My establishment has heretofore been very extensive, but this season, for the purpose of producing plants of these new varieties of greatest possible excellence in sufficient number to satisfy the increasing demand, it has been very greatly enlarged, and nothing has been omitted which my experience and knowledge have suggested for enabling me to secure a large supply of plants that will produce the best results as to hardy and vigorous productiveness in Garden and Vineyard, for table use and for wine.

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These vines are grown from single eyes of well-matured wood.—After many years' experience in growing vines, we have for three years past discarded the pot culture, because it induces a cramped condition of the roots, from which they with difficulty recover.

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CONCORD VINES,

From single eyes, one year old.

$12 00 per 100; $80 00 per 1000;
$700 per 10,000.

We also offer fine plants of

Adirondac, Creveling, Allen's Hybrid, Ives' Madeira, Diana, Israella, Hartford Prolific, Lydia, Rebecca, Rogers' Hybrids, and the other popular sorts, all at low prices.

We commend our vines to dealers, as particularly adapted to their needs, and have so arranged the rates that the difference in the prices of different quantities will afford them a good profit.

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25,000 DELAWARE,	8,000 HARTFORD PROLIFIC,
5,000 ROGERS' HYBRIDS,	3,000 DIANA,
3,000 IONA,	2,000 ADIRONDAC,
2,000 ALLEN'S HYBRID,	1,000 ISRAELLA,

and numerous other valuable varieties, both old and new. We thank our customers for the liberal patronage they have bestowed, and assure them and all interested in vine and grape culture that no care or expense will be spared the present season to bring our vines to the HIGHEST STANDARD.

Our Prices will merit the attention of **Dealers** and **Planters. Responsible Agents** are wanted in every town to form clubs, or to spend the season in canvassing. Large commission will be given to such as can furnish reliable references; none others need apply.

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YELLOW STONE	"	10 "	"	1
GOLDEN BALL, extra fine,	"	10 "	"	1
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YELLOW FINLAND,	"	20 "	"	1 50
DALE'S HYBRID	"	10 "	"	75c.
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Scarlet Chinese Winter do	"	30 "	"	4 00
Round Spinach	"	10 "	"	75c.
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I'VE STRUCK ILE. With an illustrated title, showing how it was done. Wilder, 30. COUSIN JEDEDIAH. Thompson, 30.

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For the cousins are a coming to see us all again,
The dowdy's in the pan and the Turkey's on the fire,
And we all must get ready for Cousin Jedediah."

OUR GRANDFATHER'S DAYS. Tony Pastor. 30.
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But I've not'ng for to lend."

I'D CHOOSE TO BE A BABY. Fred Buckley, 30. Sent post paid on receipt of price. OLIVER DITSON & CO., Publishers, 277 Washington-street, Boston.

The Herald of Health
AND
Journal of Physical Culture,

for June, is full of the best matter for all invalids, and for all who would preserve their health. Every person should see it. 15 cents a number; $1.50 a year. A new volume in July. 5000 copies of the Cook Book already sold. Dr. Hall says its mode of cooking would add 10 years to the average of human life. Price 30 cents. If you are sick and would get well, learn how to live by reading these books and let nostrums alone. Address MILLER, WOOD & CO.,
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[From Rev. I. C. Pershing, Prest. Pittsburg Female College.]
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[From Rev. Samuel Wolcott, D. D., Cleveland, Ohio.]
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Opinions of the Press.—"MERRYMAN'S MONTHLY is the merriest periodical afloat. Abounding in witticisms and striking caricatures, it is a jolly companion at all times. We commend it to the lovers of fun."—*Observer and Recorder*, Rising Sun, Indiana.

"It is full of fun and merriment. * * Send for it if you are troubled with the blues, or afraid of them."—Canfield, Ohio, *Weekly Herald.*

"MERRYMAN'S MONTHLY for April is, as usual, a laughter-provoking, comic visitor.—'Laugh and be fat,' is an old maxim, and we would 'prescribe' to lank, thin specimens of humanity the trial of a few numbers of Merryman."—Hudson, Michigan, *Herald.*

JULY NUMBER READY AT ALL NEWS AGENTS.

A NEW VOL.! LOOK AT JULY NO.!—Portraits of PRESIDENT JOHNSON—two views; SECRETARY HARLAN; Queen Victoria; the Empress Eugenie; the Emperor Alexander; Julius Cæsar, with Sketches of Character; the Conspirators, and How they Look; the Physiognomy of Classes; Love and Lovers; Second Marriages; Fat Folks and Lean Folks, and How to Cure them, with Illustrations; The Russian, with portraits; Enlarging the Lungs; Immortality of Mind; A Wonderful Prediction Fulfilled; Hymeneal Poetry; Maiden's Eyes; An Appeal from the South; Art and Artists; Practical Preaching; Work-Day Religion; A Hint to Maiden Ladies; Dictionary of Phrenology and Physiognomy, with engravings; Hats—a New Notion, illustrated; Our Country; "Able-bodied Men;" Early Patriots of America, illustrated; Our Finances; The Atlantic Cable, and Americans in England; with much more in JULY DOUBLE NO. PHRENOLOGICAL JOURNAL. Best No. ever issued. Begins a new Vol. Only 20 cents, by return post, or a year for $2. Subscribe now. Address
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BOOKS FOR FARMERS and OTHERS.

[Any of the following books can be obtained at the Office of the *Agriculturist* at the prices named, or they will be forwarded by mail, *post-paid*, on receipt of the price. These prices are positively good only to August 1st.]

Allen's (L. F.) Rural Architecture	$ 1 50
Allen's (R. L.) American Farm Book	1 50
Allen's Diseases of Domestic Animals	1 00
American Bird Fancier	30
American Rose Culturist	30
American Weeds and useful Plants	1 75
Art of Saw Filing (Holly)	60
Barry's Fruit Garden	1 75
Beecher's (Henry Ward) Fruit, Flowers and Farming	1 25
Bement's Poulterer's Companion	2 00
Bement's Rabbit Fancier	30
Blake's Farmer's Encyclopedia	1 50
Boussingault's Rural Economy	1 50
Bridgeman's Fruit Cultivator's Manual	75
Bridgeman's Young Gardener's Assistant	2 00
Bridgeman's Kitchen Garden Instructor	75
Bridgeman's Florist's Guide	75
Brandt's Age of Horses (English and German)	50
Breck's Book of Flowers	1 50
Browne's Field Book of Manures	1 50
Buist's Flower garden Directory	1 50
Buist's Family Kitchen Gardener	1 00
Burr's Vegetables of America	5 00
Carpenters and Joiners' Hand Book (Holly)	60
Chorlton's Grape-Grower's Guide	75
Cobbett's American Gardener	75
Cole's (S. W.) American Fruit Book	60
Cole's Veterinarian	75
Colman's Agriculture	5 00
Copeland's Country Life	4 50
Cottage Bee-Keeper	75
Cotton Planters' Manual (Turner)	1 50
Dadd's Modern Horse Doctor	1 50
Dadd's (Geo. H.) American Cattle Doctor	1 50
Dana's Muck Manual	1 25
Dog and Gun (Hooper's)	30
Downing's Landscape Gardening (new Edition)	6 50
Downing's Cottage Residences	2 50
Downing's Fruits and Fruit Trees of America	3 00
Eastwood on Cranberry	75
Elliott's Western Fruit Grower's Guide	1 50
Employment of Women—By Virginia Penny	1 50
Fessenden's Complete Farmer and Gardener	1 50
Flax Culture (Ready next month)	50
French's Farm Drainage	1 50
Field's (Thomas W.) Pear Culture	1 25
Fish Culture	1 25
Flint (Charles L.) on Grasses	2 00
Flint's Milch Cows and Dairy Farming	2 00
Fuller's Grape Culturist	1 50
Fuller's Strawberry Culturist	30
Goodale's Principles of Breeding	1 25
Gray's Manual of Botany and Lessons in one Vol.	4 00
Gray's How Plants Grow	1 25
Guenon on Milch Cows	75
Hall's (Miss) American Cookery	1 25
Haraszthy Grape Culture, &c.	5 00
Harris' Insects Injurious to Vegetation, plain	3 50
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Herbert's Hints to Horsekeepers	1 75
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Lenchar's How to Build Hot-houses	1 50
Liebig's Familiar Letters on Chemistry	50
Liebig's Modern Agriculture	1 25
Linsley's (D. C.) Morgan Horses	1 50
Manual of Agriculture by G. Emerson and C. L. Flint	1 00
Mayhew's Illustrated Horse Doctor	3 50
Mayhew's Illustrated Horse Management	3 50
McMahon's American Gardener	2 50
Miles on the Horse's foot	75
Morrell's American Shepherd	1 75
My Farm of Edgewood	2 00
National Almanac and Annual Record	1 50
Neill's Practical Gardener (Pardee)	1 50
Norton's Scientific Agriculture	75
Olcott's Sorgho and Imphee	1 25
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Wheat Plant (John Klippart's)	1 50
Woodward's Country Homes	1 50
Youatt and Spooner on the Horse	1 50
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Agriculturist Strawberry Successful.—Plants as Premiums.

The past month has definitely established the great value of this variety. We wish every reader could have looked upon the plot on the Publisher's grounds—the stools in regular order, each almost large enough to fill from a peck to ½ bushel measure, with hardly a defective plant in the whole plot; though most of them were set out October and November, 1864 and not all protected during winter. There is not the least sign of disease or worm in the whole plot; and the usual white grub, so often fatal to this and other plants, in all localities, seems to have let these entirely alone. The fruit was large, beautiful, and of excellent quality; and though the plants were taxed to the utmost in producing runners, which were lifted until April 17th, the fruit was still so abundant, that home dealers readily offered and paid $300 for what they could themselves pick on a trifle over half an acre of them, with no trouble or expense to the proprietor. As all the plants possible were desired, no effort was made to produce extraordinary specimens, yet under the hard treatment above described, large numbers of berries were picked, ranging only 20 to 30 in the pound; and some were larger still, while the fruit was solid and crimson to the core. These facts were witnessed by many neighbors and visitors. At the second exhibition, June 15th, after the best fruit was gone, this variety was excelled by the Russell, in the weight of three heaviest berries. We leave others, less interested, to speak of the comparative flavor. We have no plants to sell, having agreed with Mr. Knox of Pittsburg, who took all our surplus plants last spring, to sell none this year, except on his account; but from the interest we have taken in bringing out and distributing this variety, we have no little pride and pleasure in the result.

As announced last month, (page 194) we reserved the right to offer plants as premiums for subscribers; and the generally successful sending of the plants by mail in wooden boxes, this year, warrants us in offering to send them thus at any time in autumn, at least prior to September 10. We therefore republish the offer of last month.

I.—To any one who will *now*, or any *time before* August 15th, send us *four* subscribers, at the regular rates ($5), we will forward, *post paid*, **Ten** of the Agriculturist Strawberry Plants, of first class, about Sept. 1.

II.—To any one sending *ten* subscribers now, or *before* August 15th, we will send **Twenty** Plants as above.

III.—An so on, for a larger number of names we will send at the rate of **20** Plants for *ten* subscribers.

☞ Subscriptions may begin at the middle of the volume, July 1st, or date back to the beginning of the volume, Jan. 1st, and receive the back numbers, which are always printed as needed from stereotype plates.

☞ In addition to the above, those new subscribers who have not before had plants of us, may call for a plant or two apiece, if each one sends 5 cents extra along with the subscription, to cover cost of postage, box and packing. We cannot afford the time, trouble and expense of reopening the offer of plants to others than new names coming in under the above premium proposition. The offer of free plants has been open to *all* subscribers for more than a year, which is surely enough.

The Agricultural Bureau.—A word to President Johnson.—We have at Washington an "Agricultural Bureau," supported at an annual expense to the country of nearly Two Hundred Thousand Dollars, including direct appropriations, the printing of the annual reports, etc. It might be of great value to the country if properly managed. There are some excellent men engaged in subordinate positions, but we say plainly, that the present head of the Bureau is not competent for his position, and we are quite sure this is the general, if not the unanimous, opinion of the more intelligent agriculturists of the country who are awake to the improvement of this great interest. We should suppose the Commissioner himself would feel this after his four years of office. He must have received many direct and indirect intimations of the feelings and wishes of the public. Owing to the heavy pressure of other public interests upon the late President, the people have hitherto consented to hold the matter in abeyance, though consultations on the subject have been frequent. There is far from entire ignorance in regard to the schemes and "White House" influences that have been brought to bear to keep the Bureau under its past and present direction, and of the efforts to secure the favorable opinion of the members of the next Congress. In behalf of our own hundreds of thousands of readers, and of the country at large, we beg President Johnson to give the subject his earliest possible attention, and place at the head of the Bureau some man of broad comprehensive views and intelligence, one able to grasp the immense interests involved in the scope of the Department, and lay out and carry into execution such plans as will promote agricultural development and improvement. At present the Bureau falls infinitely below what it should and might be, and there is no hope of its being better, until under more competent direction.

The Washington Monument—Is it a Humbug?—On the Mall, west of the Smithsonian Institute, at Washington, stands a half or quarter-finished obelisk called "Washington Monument," and thus it has stood for years past. Large contributions have been called for, to aid in building it, from time to time, from Maine to California. In the Patent Office is a model of the proposed completed monument, and at each corner of it is a glass box calling for contributions. While there at the Review, we noticed many patriotic soldiers putting in their hard earned currency freely, and we learned that this had been done very largely during the recent encampment of our armies around the Capital. These boxes are emptied every now and then, and we would like to know what is done with the money. We do not remember any report of receipts or expenditures by the "Association" for several years past, and hear it intimated that some of the manages are not the most loyal, or have not been. It may be all right; but in behalf of the contributors to the enterprise, among whom we *have* been numbered, we call for full information. Who has charge of the money, and is every dollar legitimately and properly expended, and how?

The Strawberry Show of 1865.

In order to meet both extremes of the Strawberry season, as well as to give those who cultivate in later localities an equal chance with those who live on warm soils, the show was continued through two days, a week apart. The Exhibition on the first day, June 8th, was very full and the fruit of an unusually fine quality. Fewer entries were made on the second day, June 15th, but they included some things not exhibited on the first day. Taken as a whole, the show was a success, and the crowds of persons who visited it, many of them with note-book in hand, showed that these free exhibitions interest great numbers and they cannot fail to be very instructive. The following are the entries and the awards of prizes.

ENTRIES JUNE 8th.

Triomphe de Gand; Crimson Favorite; Agriculturist: John Cole, Tompkinsville, Staten Island.

Seedling: Erastus G. Barret, Sag Harbor, L. I.

Boston Pine; Chilian Pyramidal: W. E. Chilson, Passaic, N. J.

Wilson; Triomphe de Gand: H. & C. G. Atwater, New Haven, Conn.

Agriculturist; Boston Pine; Green Prolific; Vicomtesse; Triomphe de Gand: L. V. Conover, Morrisania, N. Y.

Agriculturist (and 3 plants): O. Judd, Flushing.

Barnes' Mammoth (with plant): TenEyck Bros., Middletown, N. J.

Seedling (and 2 plants); Agriculturist: Seth Boyden, Newark, N. J.

Wilson, Triomphe de Gand: T. W. Sufferns, Sufferns, N. Y.

Gen. Grant (seedling from the Agriculturist): W. A. Burgess, Glen Cove, L. I.

Triomphe de Gand: Geo. Elvins, Hammonton, N. J.

Col. Ellsworth; Seedling: I. L. Nostrand, Brooklyn,

Russel; Buffalo; Lady Finger; Monitor; Hovey; Crimson Favorite; French's Seedling; Green Prolific; Triomphe de Gand; Downer's Prolific; Ward's Favorite; Cutter; Vicomtesse; Deptford White: E. Williams. Montclair, N. J

Russell; Heins' Prolific: E. Faile, Woodstock, N.Y.

Imported German Strawberries: Ernst & Bro., South Amboy, N. J.

Hautbois: I. E. Chapman, Perth Amboy, N. J.

Boston Pine or Bartlett: Edward Kelly, N. Y. City.

Wilson; Triomphe de Gand: G. Henry, Hudson N. J

Green Prolific; Lennig's White; La Constante; Russell: C. S. Pell, N. Y. Orphan Asylum.

Hooker; Scarlet Magnate, Wilson; Burr's New Pine; LeBaron; Frederick William; Rein Hortense, Charlton's Prolific; Marguerite; French's Seedling; Brighton Pine; Ladies' Pine; Vicomtesse; Scott's Seedling, Cutter; Deptford Pine; Victory; Mrs. Fuller; Austin; Monitor; Albion; Triomphe de Gand; Jenny Lind; Ridgewood; Brooklyn Scarlet; Green Prolific; Belle Bordelaise; Schiller; Col. Ellsworth; Gen. Scott; Iowa; Nicholson's Superb; Gen. McClellan: Black Prince; De Montrieul; Lennig's White; Bonte de St. Julien; Scotch Runner; Victoria; Emma; Napoleon 3d; Albion: Thos. Cavanagh, Brooklyn, N. Y.

Russel; Wilson; Eliza (seedling); Gen. McClellan; Jucunda; Triomphe de Gand; Austin; Green Prolific; Boston Pine; McAvoy's Superior; Buffalo; La Constante; Fillmore; Cutter; Green Prolific; Hovey; Hooker; Brooklyn Scarlet, Virginia: Francis Brill, Newark, N. J.

Agriculturist; Union Scarlet; McAvoy's Superior; Green Prolific. John Grove, Union, N. Y.

Seedling: E. H. Bogert, Manhasset, L. I.

ENTRIES JUNE 15th.

English Seedling, 3 varieties: R. Wade, Troy, N. Y.

Eight Seedlings: W. H. Romeyn, Kingston, N. Y.

Frances Emma (seedling): H. W. Tibbetts, White Plains, N. Y.

Perry (Seedling): Geo. Perry & Son, Georgetown, Ct.

Alpine; Hautbois: Thos. Cuthbert, Riverdale, N. Y.

Russell; Wilson; Triomphe de Gand; La Constante: Geo. Herbert, Peekskill, N. Y.

Seedling (Plant): Wm. Teft, Fordham, N. Y.

Agriculturist: O. Judd, Flushing, L. I.

Lennig's White: Russell; Fillmore: C. S. Pell, N. Y. Orphan Asylum.

Russell; Black Prince; Austin; Triomphe de Gand; Brooklyn Scarlet; Ridgewood; La Constante; Gen'l Scott; Marguerite; Victoria; Cutter; Monitor; Lennig's White; Deptford White; Belle Bordelaise; Hooker; Crimson Favorite; Bonte St. Julien; Vicomtesse; Scotch Runner; Alpine: Thos. Cavanagh, Brooklyn,

Boston Pine (Bartlett): Mr. Sperry, Staten Island.

Downer's Prolific: Longworth's Prolific; Union Scarlet; Berry for name: John Crane, Union, N. Y.

PRIZES AWARDED.

For Best Strawberry, new or old; to Seth Boyden, Newark, N. J., for Agriculturist, $5.

For Best 12 approved varieties; to Francis Brill, Newark, N. J. $5.

Second Best do; to E. Williams, Montclair, N. J. $3.

For Largest and best collection; to Thos. Cavanagh, Brooklyn, N. Y., $5.

For Best show of Strawberry plants in pots, to Thos. Cavanagh, $5.

For Best Market variety, 2 quarts (Agriculturist); to Mr. Olm, gardener to O. Judd, Flushing, N. Y., $3.

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For best Alpines to Thos. Cuthbert, Riverdale, L. I. $1.

Best New Seedling; Seth Boyden, Newark, N. J., $5.

For Best pint of each of the following varieties: For Agriculturist, to Seth Boyden; for Russell's Prolific, to C. S. Pell: for Brooklyn Scarlet, to Francis Brill; for Monitor, to E. Williams; for Col. Ellsworth, to Thos. Cavanagh; for Triomphe de Gand, to H. & C. G. Atwater, New-Haven, Conn., and Geo. Herbert, Peekskill, N. Y.; for Wilson, to Geo. Henry, Hudson City, N. J.; for Hovey's Seedling, to E. Williams; for Buffalo, to Francis Brill; for Hooker, to Francis Brill, $1 each.

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